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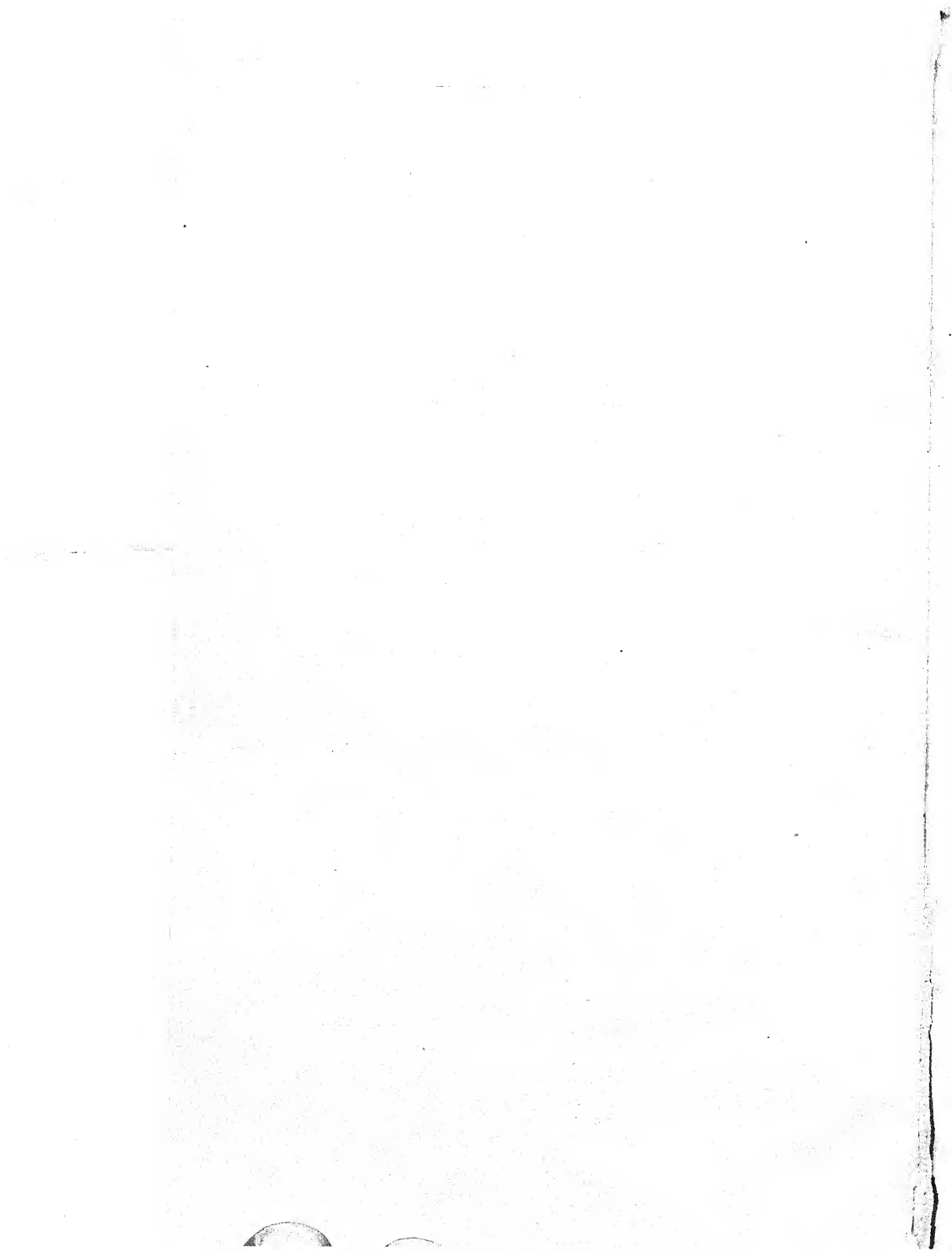
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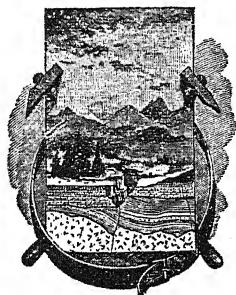
# A CATALOGUE

OF THE

## Cretaceous and Tertiary Plants of North America

BY

FRANK HALL KNOWLTON



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LETTER OF TRANSMITTAL.

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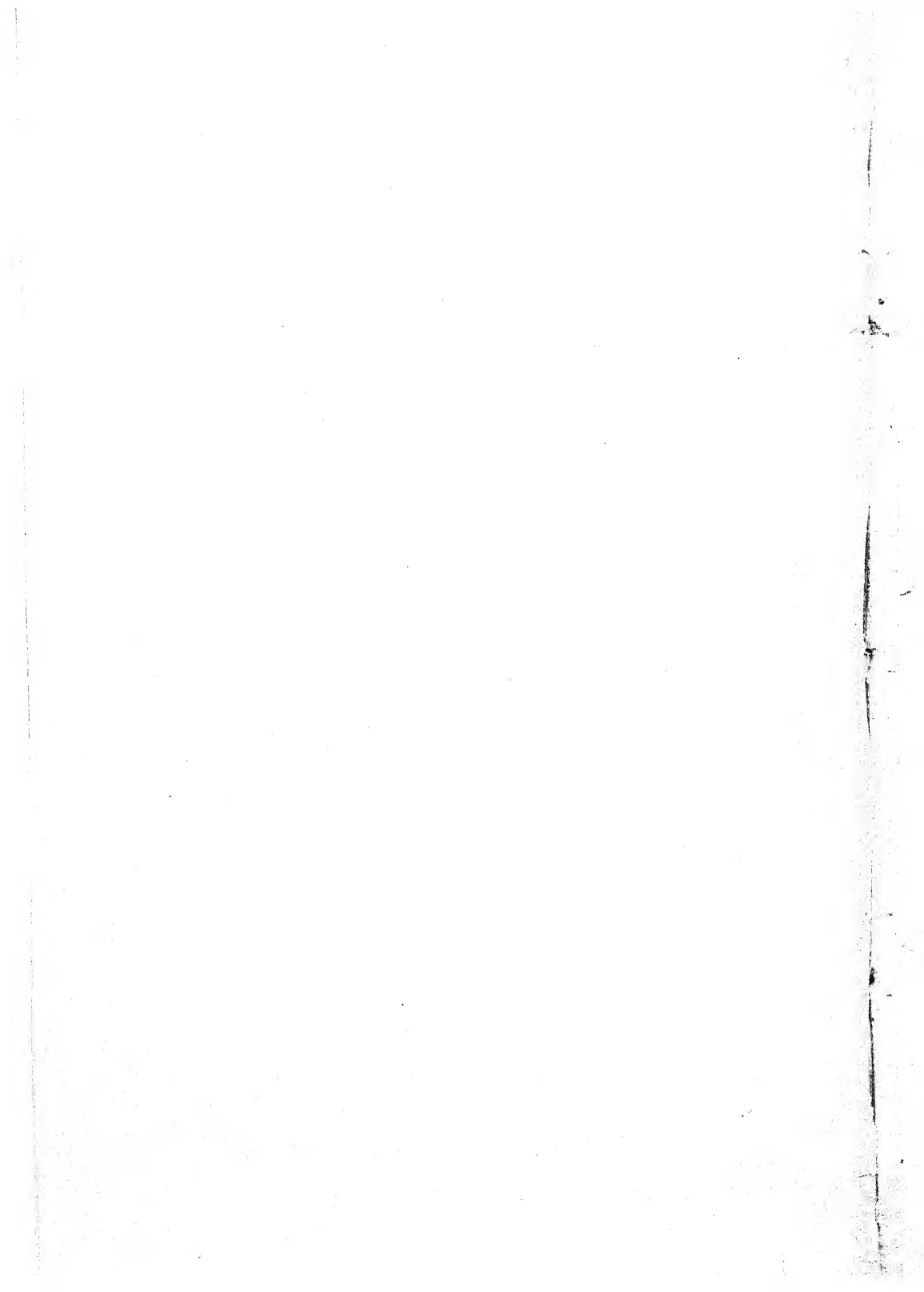
DEPARTMENT OF THE INTERIOR,  
UNITED STATES GEOLOGICAL SURVEY,  
*Washington, D. C., January 12, 1898.*

SIR: I have the honor to transmit herewith the manuscript of a catalogue of the Cretaceous and Tertiary plants of North America, and to request its publication as a bulletin of the Survey.

Very respectfully, yours,

F. H. KNOWLTON,  
*Assistant Paleontologist.*

Hon. CHARLES D. WALCOTT,  
*Director United States Geological Survey.*



# A CATALOGUE OF THE CRETACEOUS AND TERTIARY PLANTS OF NORTH AMERICA.

By F. H. KNOWLTON.

## INTRODUCTION.

This catalogue of the Cretaceous and Tertiary plants of North America is the outcome of the author's personal needs, and is presented, even in its present somewhat imperfect form, in the hope that it may be of assistance to other workers in this field.

The first catalogue of approximately this scope was published by Prof. Leo Lesquereux in the Tenth Annual Report of the United States Geological and Geographical Survey of the Territories<sup>1</sup> under the title Catalogue of the Cretaceous and Tertiary Plants of North America, with References to the Descriptions. In this catalogue the species are arranged in botanical sequence. The Cretaceous flora embraced only 157 species and the Tertiary flora 549 species, or a total of 706 for these two great geological systems. As a proof of the rapid growth of paleobotanical knowledge in this country during the twenty-one years between that and the present enumeration, it may be stated that the Potomac flora alone now numbers more species than the total Cretaceous and Tertiary floras known to Lesquereux, and that the flora of the Dakota group has more than twice as many species (460) as the whole Cretaceous had, as then known.

The only other catalogue is that of S. A. Miller, published in 1881 under the title North American Mesozoic and Cænozoic Geology and Palæontology; or, An Abridged History of Our Knowledge of the Triassic, Jurassic, Cretaceous, and Tertiary Formations of this Continent. This is hardly more than a crude compilation from that of Lesquereux and certain publications that had appeared between the date of that and the year 1881.

A number of lists without references or synonymy have been published which embrace simply the names and in some cases the distribution of the species—such, for example, as Lesquereux's "Table of distribution of the species of fossil plants in the Tertiary formations

<sup>1</sup> Washington, 1876 [1878], pp. 487-520.

of North America;"<sup>1</sup> a list under the same title in the following volume;<sup>2</sup> a "Table showing the geographical distribution of the fossils of the Laramie group, collected during the season of 1877;"<sup>3</sup> "A table of distribution of the plants of the Cretaceous Cenomanian formation;"<sup>4</sup> "Table of distribution of the species of the Laramie group;"<sup>5</sup> "Table of distribution of the plants of the Green River and White River group;"<sup>6</sup> "Table of distribution of North American Miocene fossil plants;"<sup>7</sup> "Table showing the distribution of the plants of the Dakota group;"<sup>8</sup> Lester F. Ward: "Table of distribution of Laramie, Senonian, and Eocene plants,"<sup>9</sup> etc.

In the present catalogue the entire flora is arranged in a single alphabetical sequence. This arrangement precludes the duplication of species which may occur in more than one formation, and is, moreover, easier of use than when the species are arranged according to botanical affinities.

I have given for each genus the original date and place of publication. In the case of the exclusively fossil genera much care has been expended in verifying these points, and while it is too much to expect that all are absolutely correct, it is hoped that the errors will prove to be few. For the living genera that have also been found fossil, the date and place of publication have been taken mainly from the Kew Index and have not in all cases been verified. The dates of these later genera are not, however, of great importance in the present connection, since botanists are not agreed as to the date that shall be taken as the initial point for genera. One school would make the introduction of binomial nomenclature, or the publication of Linnaeus's *Species Plantarum*, 1753, as the initial point for both genera and species, while another school would take the publication of Linnaeus's *Systema*, in 1735, as the starting point for genera. Other botanists would go still further back to Tournefort, who has been called the father of genera, or even to the remote place in literature when a genus was first printed, no matter in what connection. It would seem wise, therefore, to settle on some important date as the initial point. For convenience the date selected in the Kew Index—1735—is here taken for the living genera. Fortunately the science of paleobotany is so young that all of the generic names that have been given in it are of later date than any of the dates in controversy, since all are later than 1800.

In the case of species, the original place and date of publication have been given in all instances. This is followed by several of the most important references, especially such as refer to descriptions and fig-

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<sup>1</sup> Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., pp. 307-309, 1871 [1872].

<sup>2</sup> Op. cit., pp. 410-417 (1872 [1873]).

<sup>3</sup> Op. cit., pp. 255 (1877 [1879]).

<sup>4</sup> Cret. and Tert. Fl., pp. 93-103 (1883).

<sup>5</sup> Op. cit., pp. 115-120.

<sup>6</sup> Op. cit., pp. 206-212.

<sup>7</sup> Op. cit., pp. 266-272.

<sup>8</sup> Monogr. U. S. Geol. Surv., XVII, pp. 222-225, 1891.

<sup>9</sup> Sixth Ann. Rept. U. S. Geol. Surv., pp. 443-514, 1886.



ures, but no attempt has been made to make it absolutely complete, since to have done this would have greatly increased the labor of compilation without adding much to its value as a catalogue. The original and, for sake of convenience, most important references are given.

When the species is a foreign one the original reference is given, followed by a reference to the first place where it is recorded as belonging to our flora. Then follow the references to figures and descriptions, if there be any, relating to its North American history.

The synonymy is placed in proper order under the species to which it belongs. Each synonym is, however, entered in its proper alphabetical place, followed by an indication of the form to which it is now referred. Thus: "*Ficus* ? *fimbriata* Lx. = *Eremophyllum fimbriatum*."

In the numerous reports on fossil plants published in the Annual Reports of the Hayden Survey, Lesquereux described many species supposed to be new to science, and also identified numerous foreign species, that were never afterwards alluded to by him. There are probably more than 100 species coming under this heading that are not entitled to recognition as belonging to our flora. These new or foreign species were described or identified from time to time in these preliminary reports, but when Lesquereux came to study them more carefully, in preparing them for the final monographs, they were discarded or merged into other species, and no record was made of such disposition. They stand, therefore, in the books as valid species, while in reality they are hardly more than *nomina nuda*. The specimens upon which they were based are now lost or embraced under other names in such a way that there is absolutely no connection between them. In the following catalogue these species have been indicated by a bracketed statement at the end. Thus: "*Quercus Goldianus* Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398 (1873 [1874]). [Not recognized by its author after first description.]"

No attempt has been made in this catalogue to give an absolutely complete account of the geographical distribution of the various species. It would have required a monographic revision of each species to determine accurately its areal distribution, and such a work was not contemplated at the present time. The distribution here given is taken mainly from the books, with little or no revision, and while it is undoubtedly correct in a large majority of cases, it is not to be taken as absolutely so. One of the tasks of the future will be to work out more completely the geographical distribution of our flora.

In similar manner, the geological distribution as here given is not to be taken as final. It is compiled from the books in most cases, and while it has been given as completely and as accurately as was possible under the circumstances, it is constantly changing to accord with the changes in the conception of the various geological horizons. As an example, the plant-bearing horizon at Point of Rocks, Wyoming, had always been referred to the true Laramie, until it was found, in 1896,<sup>1</sup>

<sup>1</sup> See Stanton and Knowlton: Bull. Geol. Soc. Am., Vol. VIII, pp. 127-156.

that it was below well-defined marine Cretaceous, and hence in the Montana formation.

Another source of uncertainty results from the disagreement among geologists and paleontologists as to the age of various beds. Thus, by some the Fort Union beds are regarded as Cretaceous and by others as Tertiary, and the so-called "Arctic Miocene" is coming to be regarded as Eocene. When it has been possible, without circumlocution, the horizon has been indicated in a way that will fix its relative position without going too far. Thus the use of the Belly River series, Denver beds, Fort Union beds, Amboy clays, Potomac formation, etc., indicates sufficiently the geological position, without attempting a discrimination perhaps unwarranted by the present state of our knowledge. But above all it should be remembered that this is an attempt at a catalogue of our Cretaceous and Tertiary plants, and is not intended as a complete exposition of their geographical or geological distribution.

No arbitrary signs or characters have been used in this work. In a few cases it was found necessary to give new names on account of the old name being preoccupied. In such cases the new name is followed by "nom. nov." In accordance with principles quite generally adopted among recent botanists, the attempt is made in this catalogue to restore the oldest specific name under which a species was described. This has resulted in a number of new combinations, which are indicated by the abbreviation "n. comb." In the case of two dates given for a publication (e. g., Fl. Amboy Clays, 1895 [1896]) the first is the title-page date, the bracketed date being the actual date of issue.

The bibliography consists simply of a list of the North American works and papers that have been consulted in preparing this catalogue, together with such others as contain original descriptions of our plants. It was not thought worth while to give a bibliography of the references to the numerous foreign species that have been identified in our flora, with the single exception of those found in the various parts of Heer's *Flora Fossilis Arctica*.

In conclusion, I beg to acknowledge my indebtedness to Prof. Lester F. Ward for valuable suggestions, use of books, etc., and to his assistant, Miss C. H. Schmidt, for assistance in cataloguing and verifying references.

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— Description of a new fossil species of *Chara*.

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— Report on a small collection of fossil plants from old Port Caddo Landing, in Little Cypress Bayou, Harrison County, Texas, made by Mr. T. Wayland Vaughan.

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Geology of Tennessee, pp. 426-428, Pl. K, 1869.

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— On some Cretaceous fossil plants from Nebraska.

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Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. for 1872, pp. 371-427, 1873.

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— Contributions to the fossil flora of the Western Territories. Part II. The Tertiary flora.

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— Report of the recent additions of fossil plants to the Museum collections.

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— Contribution to the Miocene flora of Alaska.

Proc. U. S. Nat. Mus., Vol. V, pp. 443-449, Pls. VI-X, 1882 [1883].

— The flora of the Dakota group.

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— Description of species added to the flora of the Laramie group.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 121-126, Pls. XVIII-XX, 1883.

— The flora of the Green River group.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 127-217, Pls. XXI-XLVa, 1883.

— Description of Miocene species from specimens obtained in the so-called Bad Lands of Dakota.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 221-237, Pls. XLVI-XLIX, 1883.

— Description of Miocene species of California and Oregon.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 239-255, Pls. L-LIX, 1883.

— Contribution to the Miocene flora of Alaska.

Contributions . . . Part III, The Cretaceous and Tertiary floras: Rept. U. S. Geol. Surv. Terr., F. V. Hayden in charge, Vol. VIII, pp. 257-263, 1883.

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1883.

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**Newberry (J. S.).** Description of fossil plants collected by Mr. George Gibbs. \* \* \*

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- Brief descriptions of fossil plants, chiefly Tertiary, from western North America.

Proc. U. S. Nat. Mus., Vol. V, pp. 502-514, 1882 [1883].

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- The flora of the Great Falls coal field, Montana.

Am. Journ. Sci., 3d series, Vol. XLI, pp. 191-201, Pl. XIV, 1891.

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— A new species of *Larix* from the Inter-Glacial of Manitoba.

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Bull. Geol. Soc. Am., Vol. VIII, pp. 127-156, 1897.

Ward (L. F.). The ginkgo tree.

Science, Vol. V, No. 124, pp. 495-497, 1885.

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Am. Journ. Sci., Vol. XLV, Mar. 1893, p. 437, 1893.

— The Cretaceous rim of the Black Hills.

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— Fossil cycadean trunks of North America, with a revision of the genus *Cycadeoidea* Buckland.

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— The Potomac formation.

Fifteenth Ann. Rept. U. S. Geol. Surv. (1893-94), pp. 307-397, Pls. II-IV, 1895.

— Descriptions of the species of *Cycadeoidea*, or fossil cycadean trunks, thus far discovered in the iron-ore belt, Potomac formation of Maryland.

Proc. Biol. Soc., Washington, Mar. 13, 1897, Vol. XI, pp. 1-17, 1897.

## CATALOGUE.

**ABIES** Jussieu. Gen., p. 414, 1789.

**Abies balsamea** (L.) Mill. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Scarboro Heights, Ontario.

**Abies Linkii** Rœm.=**Abietites Linkii**.

**Abies nevadensis** Lx.=**Taxodium distichum miocenium**.

**Abies setiger** Lx.=**Abietites setiger**.

**ABIETITES** Hisinger. *Lethæa suecica*, p. 110, 1837.

**Abietites angusticarpus** Font. Potomac Fl., p. 263, pl. cxxxiii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

Horsetown beds: Shasta County, California.

**Abietites californicus** Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894. Nomen nudum.

Horsetown beds: Shasta County, California.

**Abietites dubius** Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 196, 1869 [reprint 1873]; Tert. Fl., p. 81, pl. vii, f. 24 [non f. 20, 21, 21a], 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group: Raton Mountains, New Mexico.

——: Upper Kanab Valley, Utah.

**Abietites dubius** Lx., Tert. Fl., pl. vi, f. 20, 21, 21a=**Sequoia Reichenbachi**.

**Abietites ellipticus** Font. Potomac Fl., p. 263, pl. cxxxii, f. 8, 9; cxxxiii, f. 2-4; clxviii, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Abietites ernestinae** Lx. Cret. Fl., p. 49, pl. i, f. 7, 1874.

*Pterophyllum Haydenii* ex. p. Lx. Am. Journ. Sci., vol. xlv, p. 91, 1868.

Dakota group: Decatur, Nebraska.

**Abietites Linkii** (Rœm.) Dunk. Monogr. d. Norddeutschen Wealdenb., p. 18, pl. ix, f. 11a-c, 1846; Font., Proc. U. S. Nat. Mus., vol. xvi, p. 268, pl. xxxvii, f. 2, 1893.

*Abies Linkii* Rœmer. N. deutsch. Oolith-Form. Nachtr., p. 10, pl. xvii, f. 2, 1839.

Trinity division: Glenrose, Texas.

**Abietites macrocarpus** Font. Potomac Fl., p. 262, pl. cxxxii, f. 7, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Abietites setiger** Lx. Tert. Fl., p. 82, pl. vii, f. 17, 18, 1878.

*Abies setiger* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873]. Probably rootlets.

**Abietites Tyrrellii** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Fort Pierre: Berry Creek, Northwest Territory.

**Abietites** sp., Font. Proc. U. S. Nat. Mus., vol. xvi, p. 277, pl. xliii, f. 4, 1893.

Trinity division: Glenrose, Texas.

**Abietitis** sp., Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. 5, p. 450, 1894.

Knoxville beds: Tehama County, California.

**ACACIA** Adanson. Fam., pl. ii, p. 319, 1763.

**Acacia oregoniana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 14, pl. v. f. 4, 1888.

Miocene: John Day Valley, Oregon.

**Acacia septentrionalis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874]; Tert. Fl., p. 299, pl. lix, f. 9, 9a, 1878.

Green River group: Castello's ranch, Colorado.

**ACACIÆPHYLLUM** Fontaine. Potomac Fl., p. 279, 1889.

**Acaciæphyllum longifolium** Font. Potomac Fl., p. 279, pl. cxxxvii, f. 6; cxxxviii, f. 1-3, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Acaciæphyllum microphyllum** Font. Potomac Fl., p. 280, pl. cxxxviii, f. 5, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Acaciæphyllum spatulatum** Font. Potomac Fl., p. 280, pl. cxxxviii, f. 4, 6-9, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Acaciæphyllum variabile** Font. Potomac Fl., p. 281, pl. clxx, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

**ACER** (Tournefort) Linnæus. Gen. pl., p. 112, 1737.

**Acer æquidentatum** Lx. Tert. Fl., p. 262, pl. xlviii, f. 1, 3, 1878; Mem. Mus. Comp. Zoöl. vol. vi, p. 26, pl. vii, f. 4, 5, 1878.

Laramie group?: Carbon, Wyoming.

Miocene: Auriferous gravels, California.

Green River group?: White and Green rivers.

**Acer amboyense** Newby. Fl. Amboy Clays, p. 106, pl. xlvi, f. 5-8, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

**Acer arcticum** Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 86, pl. xxii; xxiii; xxiv, f. 1, 2; xxv, f. 1-3, 1877; Lesquereux, Mem. Mus. Comp. Zoöl., vol. vi, p. 60, 1878.

Fort Union group: Bad Lands, Dakota.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

**Acer Bendirei** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 14, pl. v, f. 5; pl. vi, f. 1; pl. vii, f. 1; pl. viii, f. 1, 1888.

*Acer trilobatum productum* Al. Br. Lesquereux. Cret. and Tert. Fl., 253, p. pl. lix, f. 1-4, 1883.

Miocene: John Day Valley, Oregon.

Miocene: Spanish Ranch, California.

**Acer Bolanderi** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 27, pl. vii, f. 7-11, 1878.

Miocene: Table Mountain, California.

**Acer dimorphum** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. ix, f. 1, 1888.

Miocene: John Day Valley, Oregon.

**Acer gracilescens** Lx. Cret. and Tert. Fl., p. 234, pl. xlix, f. 7 (6?), 1883.

Fort Union group: Bad Lands, Dakota.

**Acer indivisum** Web. Palæontogr., vol. ii, p. 198, pl. xxii, f. 2a, 2b, 1852; Ward, Bull. U. S. Geol. Surv., no. 37, p. 66, pl. xxix, f. 5, 1887.

Laramie group?: Carbon, Wyoming.

*Acer indivisum* Lx. = *Acer Lesquereuxii*.

**Acer Lesquereuxii** nom. nov.

*Acer indivisum* \* Lx. Cret. and Tert. Fl., p. 180, pl. xxxvi, f. 6, 9, 1883.

[\* *A. indivisum* Lx., 1883. Preoccupied by O. Weber, 1852.]

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

**Acer macropterum** Heer. Kongl. Vetenskaps-Akad. Föhandl., 1868, p. 68; K. Sv. Vetenskaps-Akad. Handling, vol. viii, no. 4, p. 37, pl. ix, f. 7-9, 1869. [In Fl. Foss. Arct., II, abt. 2, 1871.]

Eocene?: Port Graham, Alaska.

**Acer minutus** (m). Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. iii, f. 6, 1892.

Cretaceous: Staten Island.

*Acer obtusilobum*? Ung. Lesquereux [1868] = *Menispermites salinæ*.

**Acer paucidentatum** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 132, pl. xiv, f. 2, 3, 1897.

Clay marl [Upper Cretaceous]: Cliffwood, New Jersey.

**Acer pleistocenicum** Penhallow. Bull. Geol. Soc. Am., vol. i, p. 327, f. (in text) 1, 1890.

Pleistocene: Don River, Toronto, Canada.

**Acer saccharinum** Wang. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 329, 1890.

*Acer spicatum* Lam. Dn., Can. Nat., vol. iii, new ser., p. 71, 1868; Geol. Hist. Pl., p. 228, 1888. [Not *Acer spicatum* Lam.]

Pleistocene: Greens Creek, Ottawa River, Canada.

**Acer saskatchewanense** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 16, 1885 [1886].

Belly River series: Medicine Hat, Northwest Territory.



**Acer secreta** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872.] [Not afterwards mentioned by author.]

Laramie?: Evanston, Wyoming.

**Acer spicatum** Lam. Dn., Can. Nat., vol. iii, new ser., p. 71, 1868 = *A. saccharinum* Wang.

**Acer trilobatum?** (Sternb.) Al. Br. Neues Jahrb. f. Min. 1845, p. 172, 1845; Lesquereux, Am. Journ. Sci., vol. xxvii, p. 361, 1859; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872].

*Phyllites trilobatus* Strenbg. Fl. d., Vorwelt, Index Iconum, pl. 1, f. 2, 1825.

——?: Bellingham Bay.

Laramie group: Evanston, Wyoming.

**Acer trilobatum productum?** (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 50, pl. cxiv, f. 1, 4–8, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 388, 1872 [1873]; Tert. Fl., p. 261, pl. xlviii, f. 2, 3a, 1878.

*Acer trilobatum* Al. Br. Lx., Ann. Rept., op. cit., p. 408, 1873 [1874].

Denver group?: Sedalia, Colorado.

Laramie group?: Carbon, Wyoming.

**Acer trilobatum productum** Al. Br. Lx. Cret. and Tert. Fl., p. 258 = *Acer Bendirei*.

**Acer trilobatum tricuspidatum** (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 49, pl. cxiii, f. 3–10, 1859; Ward, Bull. U. S. Geol. Surv., no. 37, p. 66, pl. xxix, f. 3, 4, 1887.

*Acer tricuspidatum* Al. Br. Neues Jahrb. f. Min., p. 172, 1845.

Fort Union group: Clear Creek and Little Missouri, Montana.

**Acer vitifolium** Al. Br. Neues Jahrb. f. Min., 1845, p. 172, 1845; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 44, 1887.

Pleistocene?: Wytheville, Virginia.

**Acer**, branches of, Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, 1888.

Miocene: John Day Valley, Oregon.

**Acer**, fruits of, Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. vi, f. 2, 3; pl. vii, f. 2, 1888.

Miocene: John Day Valley, Oregon.

**Acer**, fruit of, Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 87, f. (in text) 20, 1890.

Eocene?: Stump Lake, British Columbia.

**Acer** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 286, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Eocene?: Barrell Springs, Wyoming.

**Acer** sp., Lx. Cret. and Tert. Fl., p. 181, pl. xxxvi, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

**Acer** sp., Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 61 (app.), 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

**ACERIPHYLLUM** Fontaine. Potomac Fl., p. 320, 1889.

**Aceriphyllum aralioides** Font. Potomac Fl., p. 321, pl. clxiii, f. 8, 1889.

Potomac formation: Virginia.

**ACERATES** Nilsson. Act. Ac. Holm., p. 345, 1831.

**Acerates** sp., Hollick in Newby., Fl. Amboy Clays, p. 124, pl. xxxii, f. 17; xli, f. 4, 5, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**ACERITES** Viviani. Mem. Soc. Geol. d. France, vol. i, p. 131, 1833.

*Acerites menispermifolia* Lx. = *Menispermites menispermifolia*.

**Acerites multiformis** Lx. Fl. Dak. Gr., p. 156, pl. xxxiv, f. 1-9, 1892.

Dakota group: Kansas.

**Acerites negundifolium** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 86, f. (in text) 19, 1890.

Eocene?: Stump Lake, British Columbia.

**Acerites pristinus** Newby. Later Extinct Flora, p. 15, 1868; Ill. Cret. and Tert. Pl., pl. v, f. 4, 1878.

Dakota group: Blackbird Hill, Nebraska.

**ACORUS** Linneaus. Gen. ed., i, p. 104, 1737.

**Acorus affinis** Lx. Ann. Rep. U. S. Geol. and Geogr. Surv. Terr., p. 410, 1873 [1874]. [Not afterwards recognized.]

Green River group?: Florissant, Colorado.

**Acorus brachystachys** Heer. K. Sven. Vetenskaps-Akad. Handl., vol. viii, no. 7, p. 51, pl. viii, f. 7, 8, 1870 [in Fl. Foss. Arct. ii, abt. iii, 1871]; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 288, 1871 [1872]; Tert. Fl., p. 105, pl. xiv, f. 12-15, 1878.

Denver group?: Sedalia, Colorado.

Laramie group?: Carbon, Wyoming.

**Acorus calamus** L. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River near Columbus, Kentucky.

**ACROSTICHOPTERIS** Fontaine. Potomac Fl., p. 106, 1889.

**Acrostichopteris cyclopteroides** Font. Potomac Fl., p. 109, pl. xciv, f. 8, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Acrostichopteris densifolia** Font. Potomac Fl., p. 107, pl. xciv, f. 4; clxx, f. 11; clxxi, f. 2, 6; clxxii, f. 13, 1889.

Potomac formation: Baltimore, Maryland; Dutch Gap Canal, Virginia.

**Acrostichopteris longipennis** Font. Potomac Fl., p. 107, pl. clxx, f. 10; clxxi, f. 1, 5, 7, 1889.

Potomac formation: Baltimore, Maryland.

**Acrostichopteris parcelobata** Font. Potomac Fl., p. 108, pl. xciv, f. 6, 7, 11, 14, 1889.

Potomac formation: Dutch Gap Canal, and near Potomac Run, Virginia.

**Acrostichopteris parvifolia** Font. Potomac Fl., p. 108, pl. xciv, f. 5, 9, 10, 12; clxxi, f. 3, 4; clxxii, f. 14, 1889.

Potomac formation: Baltimore, Maryland; Dutch Gap Canal, Trents Reach, Virginia.

**ACROSTICHUM** Linnæus. Gen. Pl., p. 322, 1737.

**Acrostichum crassifolium** Font. Potomac Fl., p. 105, pl. xvi, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Acrostichum hesperium** Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Eocene: Green River, Wyoming.

**ADIANTITES** Göppert. Syst. Filic. Foss., p. 216, 1836.

**Adiantites gracillimus** Lx. Cret. and Tert. Fl., p. 137, pl. xxi, f. 8, 1883.

Green River group: Florissant, Colorado.

**Adiantites Klipsteini** (Dunk.) Brongn. = *Glossozamites Klipsteini*.

**Adiantites prælongus** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 19, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island, Nanaimo.

**ÆSCULOPHYLLUM** Dawson. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 149, 1895-96.

**Æsculophyllum hastigense** Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 149, pl. viii, f. 16, 1895-96.

Eocene: Burrard Inlet, British Columbia.

**ÆSCULUS** Linnæus. Syst., ed. ii, p. 22, 1740.

**Æsculus antiquus** Dn. Rept. on Geol. and Res. near Forty-ninth Parallel, appen. A, p. 330, pl. xvi, f. 8, 9, 1875.

Bad Lands: West of Woody Mountain, Canada.

*Aleurites eoceneca* Lx. = *Grewiopsis eocenica*.

**ALIANTHOPHYLLUM** Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890 [1891].

**Alianthophyllum incertum** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 25, 1890 [1891].

Eocene?: Tranquille River, British Columbia.

**ALIANTHUS** Desfontaines. Act. Ac. Paris, p. 265, 1786.

**Alianthus longe-petiolata** Lx. Cret. and Tert. Fl., p. 197, pl. xl, f. 6, 7, 1883.

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

**Alianthus ovata** Lx. Cret. and Tert. Fl., p. 254, pl. li, f. 7, 8, 1883.

Miocene: Bridge Creek, Oregon.

**ALISMACITES** Saporta. Ann. sci. nat. Bot., 4th ser., vol. xvii, p. 228, 1862.

**Alismacites dakotensis** Lx. Fl. Dak. Gr., p. 37, pl. ii, f. 10, 1892.

Dakota group: Kansas.

**ALNITES** Göppert. De Floribus in Statu Fossili: Nova Acta Acad. Cæs. Leop., vol. xviii, pt. 3, p. 564, p. 20 of reprint, 1837.

**Alnites curta** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 86, f. (in text) 18-18c, 1890 [1891].

Eocene?: North Fork Similkameen River, British Columbia.

**Alnites crassus** Lx. Geol. and Nat. Hist. Survey Minn., vol. iii, p. 13, pl. B, f. 4, 1893.

Dakota group: New Ulm, Minnesota. <sup>1</sup>

**Alnites grandifolia** Newby. Later Extinct Floras, p. 9, 1868; Ills. Cret. and Tert. Fl., pl. iv, f. 2, 1878.

Dakota group: Nebraska.

*Alnites inæquilateralis* Lx. = *Alnus inæquilateralis*.

**Alnites insignis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 38, 1882 [1883].

Upper Cretaceous: Nanaimo.

Mill Creek series: Mill Creek ?.

*Alnites quadrangularis* Lx. = *Hamamelites quadrangularis*.

**ALNUS** Gärtner. Fr. and Sem., vol. ii, p. 54, pl. 90, 1791.

**Alnus alaskana** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Kootznahoo Archipelago, Alaska.

**Alnus carpinifolia** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888. Denver group: Golden, Colorado.

**Alnus carpinoides** Lx. Cret. and Tert. Fl., p. 243, pl. l, f. 11, pl. li, f. 4, 4a, 5, 1883.

Miocene: Bridge Creek, Oregon.

**Alnus cordata** Lx. Cret. and Tert. Fl., p. 151, 1883.

Green River group: Florissant, Colorado.

**Alnus corrallina** Lx. Cret. and Tert. Fl., p. 243, pl. li, f. 1-3, 1883.

Miocene: Corral Hollow, California; John Day Valley, Oregon.

**Alnus corylifolia** Lx. Proc. U. S. Nat. Mus., vol. v., p. 446, pl. vii, f. 1-4, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

**Alnus grandiflora** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

**Alnus Grewiopsis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 30, pl. xiv, f. 1, 1887.

Laramie group: Hodges Pass, Wyoming.

**Alnus inæquilateralis** Lx. Cret. and Tert. Fl., p. 151, 1883.

*Alnites inæquilateralis* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 381, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 307, 1874 [1876]; Tert. Fl., p. 141, pl. lxii, f. 1-4, 1878.

Green River group: Alkali Station, Wyoming.

*Alnus kanseana* Lx. = *Hamamelites kansaseanus* = *Quercus kanseana*.

***Alnus Kefersteinii*** (Göpp.) Ung. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872]; Tert. Fl., p. 140, pl. xviii, f. 6-8; lxiv, f. 11, 1878; Heer., Fl. Foss. Alask., p. 28, pl. iii, f. 7, 8, 1869.

*Alnites Kefersteinii* Göpp. De Floribus in Statu Fossili, p. 564, pl. xli, f. 1-7, 1837.

Eocene?: Alaska.

Miocene: John Day Valley, Oregon; Shasta County, California.

***Alnus Kefersteinii*** (Göpp.) var. Heer. Fl. Foss. Alask.: K. Sv. Vetenskaps-Akad. Handl., vol. viii, No. 4, p. 28, pl. v, f. 9, 1869. [In Fl. Foss. Arct., ii, abt. ii, 1871.]

Eocene?: Port Graham, Alaska.

***Alnus rubra*** Bong. Knowlton. Journ. Geol., vol. iii, p. 532, 1895.

Inter-glacial: Muir Glacier, Alaska.

***Alnus rugosa*** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

***Alnus serrata*** Newby. Later Extinct Floras, p. 55, 1868.

Fort Union group: Yellowstone River, Montana and Dakota.

***Alnus*** sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Scarboro Heights, Ontario.

**AMELANCHIER** Medicus. Phil. Bot., i, p. 155, 1789.

***Amelanchier canadensis*** (L.) Medic., var. *rotundifolia* (Mx.) T. & G. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

***Amelanchier typica*** Lx. Cret. and Tert. Fl., p. 198, pl. xl, f. 11, 1883.

Green River group: Florissant, Colorado.

***Amelanchier typica*** var. Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 57, 1888.

Denver group: Golden, Colorado.

***Amelanchier similis*** Newby. Later Extinct Floras, p. 48, 1868; Ill. Cret. and Tert. Pl., pl. xxv., f. 6, 1878.

Fort Union group: Yellowstone River, Montana.

**Ament of Conifer** (a) Font. Potomac Fl., p. 225, pl. cxxxvi, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

**Ament of Conifer** (b) Font. Potomac Fl., p. 225, pl. cxxxvi, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

**Ament of Conifer** (c) Font. Potomac Fl., p. 226, pl. cxxxvi, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

**Ament of Conifer** (d) Font. Potomac Fl., p. 226, pl. cxxxvi, f. 5, 1889.

Potomac formation: Near Cherry Hill Station, Virginia.

**Ament of Conifer** (e) Font. Potomac Fl., p. 226, pl. cxxxv, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

**Ament of Conifer** (f) Font. Potomac Fl., p. 227, pl. cxxxvi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

**Ament of Angiosperm?** Font. Potomac Fl., p. 272, pl. cxxxv, f. 16, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**AMPELOPHYLLUM** Lesquereux. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 395, 1875 [1876].

**Ampelophyllum attenuatum** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 354, pl. ii, f. 3, 1874 [1876].

Dakota group: Fort Harker, Kansas.

**Ampelophyllum firmum** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876].

Dakota group: Kansas.

**Ampelophyllum ovatum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, 1874 [1876].

*Celtis? ovata* Lx. Cret. Fl., p. 66, pl. iv, f. 2, 3, 1874.

*Populites ovata* Lx. Am. Journ. Sci., vol. xlii, p. 94, 1868.

Dakota group: Decatur, Nebraska.

**AMPELOPSIS** Michaux. Fl. Bor. Am., vol. i, p. 159, 1803.

**Ampelopsis tertiaria** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 7, 1871 [1872]; Tert. Fl., p. 242, pl. xliii, f. 1, 1878.

Green River group: Green River Station, Wyoming.

**AMYGDALUS** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Amygdalus gracilis** Lx. Cret. and Tert. Fl., p. 199, pl. xl, f. 12-15; pl. xlii, f. 6, 1883.

Green River group: Florissant, Colorado; Uinta County, formerly but wrongly called Randolph County, Wyoming.

**ANDROMEDA** Linnæus. Syst., ed. i, 1735.

**Andromeda acuminata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876].

Dakota group: Kansas.

**Andromeda affinis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 348, 1874 [1876]; Cret. and Tert. Fl., p. 60, pl. ii, f. 5, 1883.

Livingston beds: Bozeman coal field.

Laramie group: Bozeman coal field.

—: Las Animas, Colorado.

**Andromeda crassa** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.

Miocene: John Day Valley, Oregon.

**Andromeda cretacea** Lx. Fl. Dak. Gr., p. 117, pl. xvii, f. 17, 18; pl. xxiv, f. 5, 1892.

Dakota group: Kansas.

**Andromeda delicatula** Lx. Cret. and Tert. Fl., p. 175, pl. xxxiv, f. 10, 11, 1883.

Green River group: Uinta County formerly, but wrongly called Randolph County, Wyoming.

**Andromeda dubia** Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 428, pl. K, f. 5, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Andromeda flexuosa** Newby. Fl. Amboy Clays, p. 121, pl. xxxiv, f. 1-5, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

**Andromeda Grayana** Heer. Neue Denkschr., vol. xxi, p. 7, pl. i, f. 7-9, 1865; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 271, 1871 [1872]; Tert. Fl., p. 234, pl. xl, f. 4, 1878.

Eocene?: Port Graham, Alaska;? Bozeman coal field, Montana; Burrard Inlet, British Columbia.

**Andromeda latifolia** Newby. Fl. Amboy Clays, p. 120, pl. xxxiii, f. 6-10; xxxiv, f. 6-11; xxxvi, f. 10, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

**Andromeda linearifolia** Lx. Proc. U. S. Nat. Mus., vol. x, p. 42, pl. iii, f. 2, 3, 1887.

Denver beds: Silver Cliff, Colorado.

**Andromeda linifolia** Lx. Fl. Dak. Gr., p. 118, pl. lii, f. 5, 1892.

Dakota group: Kansas.

**Andromeda novæ-cæsareæ** Hollick in Newby. Fl. Amboy Clays, p. 121, pl. xlii, f. 9-12, 28-31, 1895 [1896].

Amboy clay: New Jersey.

**Andromeda Parlatorii** Heer. Phyll. Crét. d. Nebr., p. 18, pl. i, f. 5, 1866; Lx., Cret. Fl., p. 88, pl. xxiii, f. 6, 7; pl. xxviii, f. 15; Fl. Dak. Gr., p. 115, pl. xix, f. 1, pl. lii, f. 6, 1892.

Prunus? Parlatorii Lx. Am. Journ. Sci., vol. xlvi, p. 102, 1868.

Dakota group: Kansas, Nebraska, and New Ulm, Minnesota.

Cretaceous: Sea Cliff, Long Island.

Amboy clay: New Jersey.

**Andromeda Parlatorii longifolia** Lx. Fl. Dak. Gr., p. 116, pl. lxiv, f. 19, 1892.

Dakota group: Kansas.

**Andromeda Pfaffiana** Heer. Fl. Foss. Arct., vol. vi, abt. 2, p. 79, pl. xxv, f. 6; pl. xxxviii, f. 5-7; pl. xlv, f. 12, 1882; Lx., Fl. Dak. Gr., p. 116, pl. xviii, f. 7, 8; pl. lii, f. 7, 1892.

Dakota group: Kansas.

**Andromeda protogæa** Ung. Denkschr. Wien. Akad., vol. ii, p. 173 [43], pl. xlv, [xxiii], f. 1-9, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Eocene?: Cherry Creek, Oregon.

**Andromeda reticulata?** Ett. Tert. Fl. Häring: Abhandl. k. k. geol. Reichsan., vol. ii, abt. iii, p. 65, pl. xxii, f. 9, 10, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie?: 6 miles above Spring Canyon, Montana.

**Andromeda rhomboidalis** Lx. Cret. and Tert. Fl., p. 176, 1883.

Green River group: Florissant, Colorado.

**Andromeda Snowii** Lx. Fl. Dak. Gr., p. 117, pl. xvii, f. 16, 1892.

Dakota group: Kansas.

- Andromeda tenuinervis** Lx. Fl. Dak. Gr., p. 116, pl. xxxviii, f. 7, 1892.  
Dakota group: Kansas.
- Andromeda vacciniifoliae affinis** Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 428, pl. K. f. 4a, 4b, 1869.  
Pleistocene?: Somerville, Fayette County, Tennessee.
- Andromeda Wardiana** Lx. Fl. Dak. Gr., p. 119, pl. lxiv, f. 17, 1892.  
Dakota group: Kansas.
- Andromeda** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 9, 1871 [1872]. [Not afterwards mentioned.]  
Montana group?: Point of Rocks, Wyoming.
- Andromeda** sp., Lx. Report on Clays in N. J., p. 28, 1878.  
Amboy clay: Washington, New Jersey.
- Andromeda** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.  
Amboy clay: South Amboy, New Jersey.
- ANEMIA** Swartz. Syn. Fil., p. 155, 1806.
- Anemia stricta** Newby. Fl. Amboy Clays, p. 38, pl. iii, f. 1, 2, 1895 [1896].  
Amboy clay: Woodbridge, New Jersey.
- Anemia subcretacea** (Sap.) Gard. and Ett. Monog. Brit. Eoc. Fl., vol. i, pt. ii, p. 45, pl. viii; pl. ix, 1880.  
Asplenium subcretaceum Sap. Fl. Foss. Sézanne, Mem. Soc. Géol. France, 3d ser., vol. viii, p. 315, pl. xxiii, f. 4, 1868.  
Gymnogramma Haydenii Lx. Ann. Rept. U. S. Geol. and Geog. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 59, pl. iv, f. 1-3, 1878.  
? Lathraea arguta Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868.
- Anemia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.  
Fort Union: Black Buttes, Wyoming.
- Anemia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.  
Fort Union: Lightning Creek, Converse County, Wyoming.
- ANGIOPTERIDIUM** Schimper. Pal. Vég., vol. i, p. 602, 1869.
- Angiopteridium auriculatum** Font. Potomac Fl., p. 113, pl. vii, f. 8-11; xxviii, f. 1, 1889.  
Potomac formation: Fredericksburg, Potomac Run, Virginia.
- Angiopteridium canmoreense** Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv., p. 83, f. (in text) 2, 1892.  
Kootanie: Canmore, British Columbia.  
Knoxville beds: Tehama County, California.  
Horsetown beds: Tehama County, California.
- Angiopteridium densinerve** Font. Potomac Fl., p. 115, pl. xxix, f. 4, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Angiopteridium dentatum** Font. Potomac Fl., p. 117, pl. xxx, f. 7-8, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Angiopteridium ellipticum** Font. Potomac Fl., p. 114, pl. xxix, f. 3, 1889.  
Potomac formation: Fredericksburg, Virginia.



**Angiopteridium nervosum** Font. Potomac Fl., p. 114, pl. xxix, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

**Angiopteridium oregonense** Font. In Stanton, Bull. U. S. Geol. Surv., no. 133, p. 22, 1895 [1896]. Nomen nudum.

Horsetown beds: Riddles, Oregon.

**Angiopteridium ovatum** Font. Potomac Fl., p. 115, pl. xxix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Angiopteridium pachyphyllum** Font. Potomac Fl., p. 115, pl. xxix, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Angiopteridium strictinerve** Font. Potomac Fl., p. 116, pl. xxix, f. 8, 9, 1889.

Potomac formation: Fredericksburg, Virginia.

**Angiopteridium strictinerve latifolium** Font. Potomac Fl., p. 116, pl. xxx, f. 1, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

**ANISOPHYLLUM** Lesquereux. Cret. Fl., p. 98, 1874.

**Anisophyllum semialatum** Lx. Cret. Fl., p. 98, pl. vi, f. 1-5, 1874.

*Quercus semialatus* Lx. Am. Journ. Sci., vol. xlv, p. 96, 1868.

Dakota group: Beatrice, Nebraska.

**Anisophyllum** sp. Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 34, 1882 [1883].

Upper Cretaceous: Baynes Sound.

**ANOMALOPHYLLITES** Watlet. Descr. Pl. Foss. d. Bassin d. Paris, p. 99, 1866.

**Anomalophyllites bridgetonensis** Hollick. Bull. Torr. Bot. Club, vol. xxiv, p. 329, pls. 311-313, 1897.

Miocene?: Bridgeton, New Jersey.

**ANOMOZAMITES** Schimper. Pal. Vég., vol. ii, p. 140, 1870.

**Anomozamites acutiloba?** Heer. Fl. Foss. Arct., vol. iv, abt. 2, p. 102, pl. xxiii, f. 1a; xxiv, f. 1-3; xxv, f. 9; xxvii, f. 3b, 1876; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 7, 1885 [1886].

Kootanie: Near Canmore, British Columbia.

**Anomozamites angustifolius** Font. Potomac Fl., p. 167, pl. xxx, f. 2, 3, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

**Anomozamites virginicus** Font. Potomac Fl., p. 168, pl. xxx, f. 4; xxxi, f. 3, 1889.

Potomac formation: Near Potomac Run and near Telegraph Station, Virginia.

**Anomozamites** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, 1892 [1893].

Kootanie: Martin Brook, British Columbia.

**ANONA** Linnaeus. Syst., ed. i, 1735.

**Anona cretacea** Lx. Cret. and Tert. Fl., p. 77, 1883.

Dakota group: Glasco, Kansas.

**Anona robusta** Lx. Cret. and Tert. Fl., p. 124, pl. xx, f. 4, 1883.

Laramie group?: Golden, Colorado.

**ANTHOLITHES** Brongniart. Mém. d. Mus. d'Hist. Nat., vol. viii, p. 238, 1822.

**Antholithes amissus** Heer. Fl. Foss. Aret., vol. i, p. 139, pl. xxiii, f. 12, 1868.

Miocene?: Mackenzie River.

**Antholithes amœnus** Lx. Cret. and Tert. Fl., p. 203, pl. xxxiv, f. 13-15, 1883.

Green River group: Florissant, Colorado.

**Antholithes horridus** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, 1885 [1886].

*Carpolithes horridus* Dn. Trans. op. cit., vol. i, sec. iv, p. 21, pl. i, f. 3, 3a, 3b, 1882 [1883].

Upper Cretaceous: Pine River, Northwest Territory.

Kootanie: North Fork Old Man River, British Columbia.

**Antholithes improbus** Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 20, 21, 1883.

Green River group: Uinta, formerly erroneously called Randolph County, Wyoming.

**Antholithes obtusilobus** Lx. Cret. and Tert. Fl., p. 203, pl. xxxii, f. 20, 1883.

Green River group: Florissant, Colorado.

**Antholithes** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 82, f. (in text) 11, 1890.

Miocene?: Similkameen Valley, British Columbia.

**Antholithus Guadium-Rosæ** Ward. Fifteenth Ann. Rept., U. S. Geol. Surv., p. 355, pl. iii, f. 7, 1895.

Potomac formation: Mount Vernon, Virginia.

**APEIBOPSIS** Heer. Fl. Tert. Helv., iii, p. 37, 1859.

**Apeibopsis cyclophylla** Lx. Fl. Dak. Gr., p. 180, pl. xxv, f. 6, 1892.

Dakota group: Kansas.

**Apeibopsis? discolor** Lx. Tert. Fl., p. 259, pl. xlvi, f. 4-7, 1878.

*Rhamnus discolor* Lx., p. p. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [See *R. discolor*.]

Laramie group: Black Buttes, Wyoming.

**Apeibopsis Gaudini** Lx. Am. Journ. Sci., vol. xxxii, p. 358, 1861; Geol. Vt., vol. ii, p. 715, 139, 140, 1861.

Brandou, Vermont.

**Apeibopsis Heerii** Lx. Am. Journ. Sci., vol. xxxii, p. 358, 1861;  
Geol. Vt., vol. ii, p. 715, f. 131, 132, 133, 1861.

Brandon, Vermont.

**APOCYNOPHYLLUM** Unger. Gen. et. Sp. Pl. Foss., p. 433, 1850.

**Apocynophyllum Scudleri** Lx. Cret. and Tert. Fl., p. 172, pl. xlvA,  
f. 1-5, 1883.

Green River group: Alkali Station, Wyoming.

**Apocynophyllum sordidum** Lx. Fl. Dak. Gr., p. 109, pl. lxiv, f. 11,  
1892.

Dakota group: Kansas.

**ARALIA** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Aralia acerifolia** Lx. Cret. and Tert. Fl., p. 232, pl. xlix, f. 5, 1883;  
op. cit., p. 265, pl. xlvB, f. 1.

Fort Union group: Bad Lands, Dakota.

Miocene: Chalk Bluffs, California.

**Aralia angustiloba** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 22,  
pl. v, f. 4, 5, 1878.

Miocene: Chalk Bluffs, California.

**Aralia berberidifolia** Lx. Fl. Dak. Gr., p. 135, pl. xvi. f. 11, 1892.

Dakota group: Kansas.

*Aralia concinna* Newby. = *Aralia Wellingtoniana*.

**Aralia coriacea** Vel. Fl. Böhm. Kreideform., Theil iii, p. 11, pl. i [xvi],  
f. 1-9; ii [xvii], f. 2, 1884; Hollick, Bull. Geol. Soc. Am., vol. 7, p. 13,  
1895.

Cretaceous: Marthas Vineyard.

**Aralia concreta** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i,  
p. 394 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p.  
349, pl. iv, f. 2-4, 1874 [1876].

*Aralia semiorbiculata* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i,  
p. 394, 1875.

Dakota group: Kansas.

**Aralia digitata** Ward. Bull. U. S. Geol. Surv., no. 37, p. 62, pl.  
xxvii, f. 3, 5; pl. xxviii, f. 1, 1887; Lx., Proc. U. S. Nat. Mus., vol. xi,  
p. 20, pl. xi, f. 4, 1888.

Fort Union group: Clear Creek, Montana.

Eocene?: Cherry Creek, Oregon.

**Aralia dissecta** Lx. Cret. and Tert. Fl., p. 176, pl. xxxv, 1883.

Green River group: Florissant, Colorado.

*Aralia dubia* Font. = *Aralia Fontainei*.

**Aralia Fontainei** nom. nov.

*Aralia dubia* \* Font. Potomac Fl., p. 314, pl. clvii, f. 1, 7, 1889.

[\**Aralia dubia* Font., 1889. Preoccupied by *A. dubia* (Ett.) Sch., Pal. Vég.,  
iii, 35, 1874.]

Potomac formation: Deep Bottom, Virginia.

**Aralia formosa** Heer. Kleide-Flora v. Moletain, p. 18, pl. viii, f. 3, 1869; cf. Lx., Cret. and Tert. Fl., p. 60, pl. xi, f. 3, 4, 1883; Fl. Dak. Gr., p. 131, 1892; Newby., Fl. Amboy Clays, p. 116, pl. xxii, f. 8, 1895 [1896].

Dakota group: Morrison, Colorado.

Amboy clay: South Amboy, New Jersey.

**Aralia ? gracilis** Lx. Tert. Fl., p. 236, pl. xxxix, f. 1, 1878.

Liquidambar gracilis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872].

Laramie?: Bridgers Pass, Wyoming.

**Aralia groenlandica** Herr. Fl. Foss. Arct., vol. vi, abt. 2, p. 84, pl. xxxviii, f. 3; xxxix, f. 1; xlii f. 16, 17, 1882; Lx., Fl. Dak. Gr., p. 134, pl. liv, f. 1-3, 1892; Newby., Fl. Amboy Clays, p. 116, pl. xxviii, f. 4, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Marthas Vineyard.

**Aralia lasseniana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 28, pl. xiv, f. 5, 1888.

Miocene?: Lassen County, California.

Eocene?: Lassen County, California.

**Aralia Looziana** Sap. and Mar. Mém. Cour. Acad. Roy. de Belgique, vol. xli, p. 77, pl. xiii, f. 1-3, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 6, pl. xxvii, f. 2, 1887.

Fort Union group: Clear Creek, Montana.

**Aralia macrophylla** Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene: Green River, Wyoming.

**Aralia Masoni** Lx. Fl. Dak. Gr., p. 133, pl. xv, f. 4, 1892.

Dakota group: Kansas.

**Aralia nassauensis** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 55, pl. 174, f. 3, 7, 1894.

Cretaceous: Brooklyn, New York.

**Aralia notata** Lx. Tert. Fl., p. 237, pl. xxxix, f. 2-4, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 60, pl. xxvii, f. 1; Proc. U. S. Nat. Mus., vol. xi, p. 40, pl. xvii, f. 1, 1888.

Platanus dubia\* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 406, 1873 [1874].

[\*Aralia dubia. Preoccupied by *A. dubia* (Ett.) Sch., Pal. Vég. iii, 35, 1874.]

Denver beds: Mount Bross and Golden, Colorado.

Fort Union group: Elk Creek, Yellowstone National Park; Yellowstone River.

Eocene?: Cherry Creek, Oregon.

**Aralia palmata** Newby. Fl. Amboy Clays, p. 117, pl. xxxix, f. 6, 7; xl, f. 3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Aralia patens** Newby (MSS.). Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. 174, f. 4, 1894; Newby., Fl. Amboy Clays, p. 117, pl. xxxviii, f. 6, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.

**Aralia polymorpha** Newby. Fl. Amboy Clays, p. 118, pl. xxxix, f. 1-5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Aralia pungens** Lx. = *Artocarpus Lessigiana*.

**Aralia quinquepartita** Lx. Bull. U. S. Geol. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872]; Newby., Fl. Amboy Clays, p. 115, pl. xl, f. 1, 2, 1895 [1896].

Dakota group: Fort Harker, Kansas.

Amboy clay: Woodbridge, New Jersey.

**Aralia radiata** Lx. Cret. and Tert. Fl., p. 64, pl. vii, f. 2, 3, 1883.

Dakota group: Kansas.

**Aralia rotundata** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 5, 1885 [1886].

Mill Creek series: Mill Creek.

**Aralia rotundiloba** Newby. Fl. Amboy Clays, p. 118, pl. xxviii, f. 5; xxxvi, f. 9, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Aralia Saportana** Lx. Bull. U. S. Geol. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 350, pl. i, f. 2, 2a, 1874 [1876]; Cret. and Tert. Fl., p. 61, pl. viii, f. 1, 2; pl. ix, f. 1, 2, 1883.

Dakota group: Kansas.

**Aralia Saportana deformata** Lx. Fl. Dak. Gr., p. 131, pl. xxiii, f. 1, 2, 1892.

Dakota group: Kansas.

**Aralia semiorbiculata** Lx. = *Aralia concreta*.

**Aralia submarginata** Lx. Cret. and Tert. Fl., p. 63, 1883; Fl. Dak. Gr., p. 133, pl. xv, f. 3, 1892.

Dakota group: Kansas.

**Aralia tenuinervis** Lx. Cret. and Tert. Fl., p. 63, pl. vii, f. 4, 1883.

Dakota group: Kansas.

**Aralia Towneri** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 394, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 349, pl. iv, f. 1, 1874 [1876]; Cret. and Tert. Fl., p. 62, pl. vi, f. 4, 1883; Fl. Dak. Gr., p. 132, pl. xxiii, f. 3, 4; pl. xxxi, f. 1, 1892.

Dakota group: Kansas.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey (?).

**Aralia transversinervia** Sap. and Mar. Rev. Fl. Heers. Gelind., p. 79, pl. 12, f. 4; pl. 14, f. 1, 1878; Hollick, Bull. Torr. Bot. Club., vol. xxi, p. 54, pl. 176, f. 1, 1894.

Cretaceous: Oak Neck, Long Island.

*Aralia triloba* Newby. Later Extinct Floras, p. 58, 1868.

Fort Union group: Fort Clarke.

*Aralia tripartita* Lx. = *Sterculia tripartita*.

*Aralia Wellingtoniana* Lx. Fl. Dak. Gr., p. 131, pl. xxi, f. 1; pl. xxii, f. 2, 3, 1892; Newby, Fl. Amboy Clays, p. 114, pl. xxvi, f. 1, 1895 [1896].

*Aralia concinna* Newby. Fl. Amboy Clays, p. 114, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

*Aralia Westoni* Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 6, 1885 [1886].

Mill Creek series: Mill Creek.

*Aralia Whitneyi* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 20, pl. v, f. 1, 1878.

Miocene: Chalk Bluffs, California.

Miocene?: John Day Valley, Oregon.

*Aralia Zaddachi*? Heer. Mioc. Balt. Fl., p. 89, pl. xv, f. 1b, 1869; Lx., Mem. Mus. Comp. Zoöl., vol. vi, p. 21, pl. v, f. 2, 3, 1878; Cret. and Tert. Fl., p. 263, pl. xlv B, f. 8-9, 1883.

Miocene: Table Mountain, Tulomne County, California.

*Aralia* sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River.

*Aralia* sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

*Aralia* sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

**ARALIÆPHYLLUM** Fontaine. Potomac Fl., p. 316, 1889.

*Araliæphyllum aceroides* Font. Potomac Fl., p. 319, pl. clvi, f. 11; clxii, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

*Araliæphyllum acutilobum* Font. Potomac Fl., p. 318, pl. clxiii, f. 2, 1889.

Potomac formation: Near Brooke, Virginia.

*Araliæphyllum magnifolium* Font. Potomac Fl., p. 318, pl. clix, f. 9, 10, 1889.

Potomac formation: Near Brooke, Virginia.

*Araliæphyllum obtusilobum* Font. Potomac Fl., p. 317, pl. clxiii, f. 1, 4; clxiv, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

*Araliopsis* sp., Lx. Rept. on Clay in N. J., p. 29, 1878 = ?

Amboy clay: Sayreville, New Jersey.

**ARAUCARIA** Jussieu. Gen. Pl., p. 413, 1789.

*Araucaria obtusifolia* Font. Potomac Fl., p. 249, pl. lxxxvi, f. 13, 1889.

Potomac formation: Trents Reach, Virginia.

**Araucaria podocarpoides** Font. Potomac Fl., p. 349, pl. lxxxvi, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

**Araucaria spathulata** Newby. Later Extinct Floras, p. 10, 1868; Ill. Cret. and Tert. Pl., pl. ii, f. 5, 5a, 1878.

Dakota group?: Sage Creek, Nebraska.

**Araucaria zamiioides** Font. Potomac Fl., p. 250, pl. cxxi, f. 1, 1889.  
Potomac formation: Near Potomac Run, Virginia.

**ARAUCARIOXYLON** Krause in Schimper. Pal. Vég., vol. ii, p. 380, 1872.

**Araucarioxylon virginianum** Kn. Bull. U. S. Geol. Surv., no. 56, p. 50, pl. vii, f. 2-5, 1888.

Triassic?: Taylorsville, Virginia.

**Araucarioxylon** sp., Kn. Journ. Geol., vol. ii, p. 260, 1894.

Lower Cretaceous: Black Hills, South Dakota.

**ARAUCARITES** Presl. in Sternberg Vers., ii, p. 203, 1833.

**Araucarites aquiensis** Font. Potomac Fl., p. 264, pl. cxxxiii, f. 8-12, 1889.

Potomac formation: Near Brooke, Virginia.

**Araucarites ovatus** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 128, pl. xii, f. 3a, 4, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Araucarites virginicus** Font. Potomac Fl., p. 263, pl. cxxxiv, f. 7, 1889.

Potomac formation: Trents Reach, Virginia.

**ARISÆMA** Martius. Flora, vol. xiv, p. 459, 1831.

**Arisæma cretacea** Lx. Fl. Dak. Gr., p. 38, pl. xlvi, f. 1, 1891.

Dakota group: Kansas.

**Arisæma? dubia** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xii, f. 6, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Arisæma? mattewanense** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xii, f. 7, 1897.

Clay Marl (Upper Cretaceous): Cliffwood, New Jersey.

**ARISTOLOCHIA** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Aristolochia cordifolia** Newby. Later Extinct Floras, p. 74, 1868.

Fort Union group: Yellowstone River, Montana.

**Aristolochia curvata** Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 135, 136, 1861.

Brandon, Vermont.

**Aristolochia dentata** (Heer) Lx. = **Aristolochites dentata**.

**Aristolochia obscura** Lx. Am. Jour. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 137, 138, 141, 1861.

Brandon, Vermont.

**Aristolochia oeningensis** Heer. Fl. Tert. Helv., vol. ii, p. 104, pl. c, f. 11b, 1856; Lx., Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 134, 1861.

Brandon, Vermont.

**ARISTOLOCHIAEPHYLLUM** Fontaine. Potomac Fl., p. 322, 1889.

**Aristolochiaephyllum crassinerve** Font. Potomac Fl., p. 322, pl. clx, f. 3-6, 1889.

Potomac formation: Near Brooke, Virginia.

**ARISTOLOCHITES** Heer. Phyll. crét. d. Nebr.: Mém. Soc. helv. d. Sci. Nat., p. 18, 1866.

**Aristolochites dentata** Heer. Phyll. crét. d. Nebr., p. 18, pl. ii, f. 1, 2, 1866; Lx., Cret. Fl., p. 87, pl. xxx, f. 6, 1874.

*Aristolochia dentata* Heer. Lesquereux, Crét. and Tert. Fl., p. 59, 1883.

Dakota group: Nebraska.

**Aristolochites infundibuliformis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]. [Apparently not afterwards referred to.]

**ARTOCARPIDIUM** Unger. Foss. Fl. v. Sotzka, p. 36: Denkschr. Wien Akad., vol. ii, p. 254, 1850.

**Artocarpidium cretaceum** Ett. Kreidefl. v. Niedersch., p. 251, pl. ii, f. 4, 1867; Lx., Fl. Dak. Gr., p. 86, pl. 1, f. 7, 1892.

Dakota group: Kansas.

*Artocarpidium olmediaefolium?* Heer. = *Celastrinites artocarpidioides*.

**ARTOCARPOPHYLLUM** Dawson. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, 1893 [1894].

**Artocarpophyllum occidentale** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. xii, f. 51; pl. xiii, f. 52, 1893 [1894].

Upper Cretaceous: Vancouver Island.

**ARTOCARPUS** Forster. Char. Gen., p. 101, 1776.

**Artocarpus californica** Kn. Science, vol. xxi, p. 24, 1893.

Auriferous gravels: Independence Hill, California.

**Artocarpus Lessigiana** (Lx.) Kn. Science, vol. xxi, p. 24, 1893.

*Myrica?* *Lessigii* Lx. Tert. Fl., p. 136, pl. lxiv, f. 1, 1878.

*Myrica?* *Lessigiana* Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 312, 1874 [1876].

*Aralia pungens* Lx. Cret. and Tert. Fl., p. 123, pl. xix, f. 3, 4, 1883.

Denver group: Golden, Colorado.

Laramie group: Coal Creek and Morrison, Colorado.

Miocene?: John Day Valley, ? Oregon.

**ARUNDO** (Tournefort) Linnaeus. Gen., ed. i, p. 19, 1737.

*Arundo cretaceus* Lx. = *Phragmites cretaceus*.



**Arundo Göpperti?** Münst. in Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 5, 1871 [1872]; Tert. Fl., p. 86, pl. viii, f. 3-5, 1878.

Green River group: Green River, Wyoming.

Denver group: Silver Cliff, Colorado.

**Arundo? obtusa** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 335, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876]; Tert. Fl., p. 87, pl. viii, f. 9, 9c, 1878.

Denver group: Golden, Colorado.

**Arundo reperta** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

Green River group: Green River, Wyoming.

**ASIMINA** Adanson. Fam. Pl., vol. ii, p. 365, 1763.

**Asimina eocenica** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 251, pl. xliii, f. 5-8, 1878.

Denver group: Golden, Colorado.

Laramie group?: Carbon, Wyoming.

**Asimina triloba** (L.) Don. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 323, 1890; Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Pleistocene: Don River, Toronto.

Miocene?: Bridgeton, New Jersey.

**ASPIDIOPHYLLUM** Lesquereux. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 361, 1874 [1876].

**Aspidiophyllum dentatum** Lx. Cret. and Tert. Fl., p. 88, 1883; Fl. Dak. Gr., p. 212, pl. xxxix, f. 1, 1892.

Dakota group: Kansas.

**Aspidiophyllum platanifolium** Lx. Cret. and Tert. Fl., p. 88, pl. ii, f. 4, 1883.

Dakota group: Olay County, Kansas.

**Aspidiophyllum trilobatum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 361, pl. ii, f. 1, 2, 1874 [1876]; Cret. and Tert. Fl., p. 87, pl. xii, f. 1; pl. xiii, f. 1-5; pl. xiv, f. 1, 1883.

Dakota group: Kansas.

*Aspidium angustipinnatum* Font.=*Dryopteris angustipinnata*.

*Aspidium angustipinnatum montanense* Font.=*Dryopteris angustipinnata montanense*.

*Aspidium cystopteroides* Font.=*Dryopteris cystopteroides*.

*Aspidium dentatum* Font.=*Dryopteris dentata*.

*Aspidium Dunkeri* (Schimp.) Font.=*Cladophlebis Dunkeri*.

*Aspidium ellipticum* Font.=*Dryopteris elliptica*.

*Aspidium "Fisheri"* Heer. Lesquereux (1870)=*Lastrea intermedia*.

*Aspidium fredericksburgense* Font.=*Dryopteris fredericksburgense*.

*Aspidium goldianum* Lx.=*Lastrea goldiana*.

*Aspidium heterophylla* Font.=*Dryopteris heterophylla*.

- Aspidium Kennerleyi* Newby = *Dryopteris Kennerleyi*.  
*Aspidium Lakesii* (Lx.) Kn. = *Dryopteris arguta*.  
*Aspidium macrocarpum* Font. = *Dryopteris macrocarpa*.  
*Aspidium microcarpum* Font. = *Dryopteris microcarpa*.  
*Aspidium monocarpum* Font. = *Dryopteris monocarpa*.  
*Aspidium montanense* Font. = *Dryopteris montanense*.  
*Aspidium oblongifolium* Font. = *Dryopteris oblongifolia*.  
*Aspidium Erstedii* Heer. = *Dryopteris Erstedii*.  
*Aspidium parvifolium* Font. = *Dryopteris parvifolia*.  
*Aspidium pinnatifidum* Font. = *Dryopteris pinnatifida*.  
*Aspidium pulchellum* Heer. Lesquereux (1870) = *Lastrea intermedia*.  
*Aspidium virginicum* Font. = *Dryopteris virginica*.

**ASPLENIOPTERIS** Fontaine. Potomac Fl., p. 117, 1889.

**Aspleniopteris adiantifolia** Font. Potomac Fl., p. 118, pl. xvi, f. 6, 1889.

Potomac formation: Fredericksburg, Virginia.

**Aspleniopteris pinnatifida** Font. Potomac Fl., p. 118, pl. xxii, f. 1-3, 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**ASPLENITES** Göppert. Syst. Fil. Foss.: Nova Acta Acad. Cæs. Leop. Nat. Cur., vol. xvii, p. 277, 1836.

**Asplenites** sp., Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 142, pl. iv, f. 4, 1895-96.

Eocene: Stanley Park, Vancouver, British Columbia.

**ASPLENIUM** Linnaeus. Gen. Pl., p. 322, 1737.

**Asplenium (Diplazium) Crossii** nom. nov.

*Diplazium Mülleri*? Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874]; Tert. Fl., p. 55, pl. iv, f. 10, 10a, 1878. [Not *Diplazium Mülleri* Heer.]

Denver group: Golden, Colorado.

**Asplenium albertum** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 6, 1885 [1886].

Mill Creek series: Mill Creek.

**Asplenium Dicksonianum** Heer. Fl. Foss. Arct., vol. iii, pt. 2, p. 31, pl. i, f. 1-5, 1874; Lx., Fl. Dak. Gr., p. 24, pl. i, f. 1, 1a, 1891; Newby, Fl. Amboy Clays, p. 39, pl. i, f. 6, 7; ii, f. 1-8; iii, f. 3, 1896.

Amboy clay: Woodbridge, New Jersey.

Dakota group: Kansas.

Kootanie: Near Canmore; Coal Creek and North Fork Old Man River, British Columbia.

**Asplenium (Diplazium) distans** Heer. Mém. l'Acad. Imp. d. Sci. St. Pet., series vii, vol. xxii [Beiträge Jura-Fl. Ost-Sib. u. Amurl.], p. 97, pl. xix, f. 5-7, 1876; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, pl. iii, f. 7, 1885 [1886].

Kootanie: Near Canmore, British Columbia.

**Asplenium dubium** Font. Potomac Fl., p. 109, pl. x, f. 9.

Potomac formation: Fredericksburg, Virginia.

**Asplenium erosum** (Lx.) n. comb.

*Pteris erosa* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872]; Tert. Fl., p. 53, pl. iv, f. 8, 1878; Cret. and Tert. Fl., p. 121, pl. xix, f. 1, 1883.

Denver group: Golden, Colorado, etc.

**Asplenium Foersteri** Deb. and Ett.? Die urwelt. Acrobryen: (Denkschr. Wien. Akad., vol. xvii, p. 193), p. 13, pl. ii, f. 4-7, 11, 1859; Newby., Fl. Amboy Clays, p. 41, pl. iv, f. 1-11, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

**Asplenium martinianum** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, pl. i, f. 1, 1885 [1886].

Kootanie: Martin Creek, Anthracite, and North Fork Old Man River, British Columbia.

**Asplenium niobrara** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 20, pl. i, f. 1, 1882 [1883].

Peace River: Northwest Territory.

*Asplenium subcretaceum* Sap. = *Anemia subcretacea*.

**Asplenium tenerum** Lx. Cret. and Tert. Fl., p. 221, pl. xlvia, f. 1, 2, 1883.

Fort Union group: Bad Lands, Dakota.

**Asplenium subsimplex** (Lx.) n. comb.

*Pteris subsimplex* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1873 [1874]; Tert. Fl., p. 52, pl. iv, f. 5-7, 1878.

*Pteris anceps* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873].

*Pteris undulata* Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 43, 1888.

*Osmunda major* Lx. Cret. and Tert. Fl., p. 121, pl. xviii, f. 5, 1883.

Denver group: Golden, Sedalia, Colorado.

**Asplenium** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Laramie?: North Fork Dutton Creek, Wyoming.

**Asplenium** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie: Lance Creek, Converse County, Wyoming.

**ATHROTAXOPSIS** Fontaine. Potomac Fl., p. 239, 1889.

**Athrotaxopsis expansa** Font. Potomac Fl., p. 241, pl. cxiii, f. 5, 6; cxv, f. 2; cxvi, f. 5; cxvii, f. 6; cxxxv, f. 15, 18, 22, 1889.

Potomac formation: Near Potomac Run, Trents Reach, Dutch Gap Canal, Virginia.

**Athrotaxopsis grandis** Font. Potomac Fl., p. 240, pl. cxiv, f. 1-3; cxvi, f. 1-4; cxxxv, f. 10, 1889.

Potomac formation: Fredericksburg and near Brooke, Virginia.

**Athrotaxopsis pachyphylla** Font. Potomac Fl., p. 242, pl. cxv, f. 1, 3; cxvii, f. 1, 3-5, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Athrotaxopsis tenuicaulis** Font. Potomac Fl., p. 241, pl. cxiv, f. 4, 5; cxv, f. 4; cxvi, f. 6; cxvii, f. 2, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

**AZOLLOPHYLLUM** Penhallow. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, 1890 [1891].

**Azollophyllum primævum** Penhallow in Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, f. 2, 1890.

Miocene?: Stump Lake, Similkameen Valley, British Columbia.

**BAIERA** Braun. Flora, 1841, p. 33, 1841. [Not seen.]

**Baiera brevifolia** Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 3, 1891.

Kootanie: Great Falls, Montana.

**Baiera foliosa** Font. Potomac Fl., p. 213, pl. xciv, f. 13, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Baiera incurvata** Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 45, pl. xiii, f. 6, 1882; Newby., Fl. Amboy Clays, p. 60, pl. x, f. 6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Baiera longifolia** (Pom.) Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 39, pl. viii, f. 6, 1877; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 5, 1885 [1886].

*Dicropteris longifolia* Pomel. Bericht d. deutsch. Naturf. Gesell., 1847, p. 339, 1847.

Kootanie: Martin Creek, British Columbia.

**BAIEROPSIS** Fontaine. Potomac Fl., p. 205, 1889.

**Baieropsis adiantifolia** Font. Potomac Fl., p. 211, pl. xcii, f. 8, 9; xciii, f. 1-3; xciv, f. 2, 3, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Telegraph Station, Virginia.

**Baieropsis adiantifolia minor** Font. Potomac Fl., p. 212, pl. xciv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Baieropsis denticulata** Font. Potomac Fl., p. 210, pl. xciii, f. 7, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Baieropsis denticulata angustifolia** Font. Potomac Fl., p. 210, pl. xcii, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

**Baieropsis expansa** Font. Potomac Fl., p. 207, pl. lxxxix, f. 1, 3; xci, f. 1; xci, f. 2; xcii, f. 5, 1889.

Potomac formation: Fredericksburg, Dutch Gap Canal, Trents Reach, Virginia.

**Baieropsis foliosa** Font. Potomac Fl., p. 209, pl. xciii, f. 4-6, 1889.

Potomac formation: Near Brooke, White House Bluff, Virginia.

**Baieropsis longifolia** Font. Potomac Fl., p. 210, pl. xci, f. 6, 1889.

Potomac formation: Near Telegraph Station, Virginia.

- Baieropsis microphylla** Font. Potomac Fl., p. 212, pl. xc, f. 6, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Baieropsis pluripartita** Font. Potomac Fl., p. 208, pl. lxxxix, f. 4; xc, f. 2-5; xci, f. 1, 3, 4, 7; xcii, f. 1, 2, 6, 1889.  
Potomac formation: Trents Reach, Dutch Gap Canal, Virginia.
- Baieropsis pluripartita minor** Font. Potomac Fl., p. 208, pl. xci, f. 5; xcii, f. 3, 4, 1889.  
Potomac formation: Trents Reach, Dutch Gap Canal, Virginia.
- Baieropsis** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 87, 1892.  
Kootanie: Anthracite, British Columbia.
- BANKSIA** Linnæus. f. Suppl., p. 15, 1781.
- Banksia helvetica** Heer. Fl. Tert. Helv., vol. ii, p. 98, 1856; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xvi, f. 6, 1869.  
Eolignitic: Mississippi.
- Banksia pusilla** Vel. Fl. Böhm. Kreidefl., Theil ii, p. 7 [32], pl. i [ix], f. 14-17, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 132, pl. xiii, f. 7, 1897.  
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- BANKSITES** Saporta. Études sur la Végétation d. Sud-Est de la France, à l'Époque Tertiaire, pt. i, p. 103, Paris, 1863.
- Banksites lineatus** Lx. Cret. and Tert. Fl., p. 165, pl. xxxii, f. 21, 1883.  
Green River group: Florissant, Colorado.
- BAUHINIA** Linnæus. Gen., ed. i, p. 126, 1737.
- Bauhinia cretacea** Newby. Bull. Torr. Bot. Club, vol. xiii, no. 5, p. 77, pl. lvi, 1886; Fl. Amboy Clays, p. 91, pl. xliii, f. 1-4; xlv, f. 1-3, 1895 [1896].  
Cretaceous clays: New Jersey.
- Bauhinia ? gigantea** Newby. Fl. Amboy Clays, p. 93, pl. xx, f. 1, 1895 [1896].  
Amboy clay: Woodbridge, New Jersey.
- BENNETTITES** Carruthers. Trans. Linn. Soc., London, vol. xxvi, p. 681, 1868.  
Bennettites dacotensis McBride = Cycadeoidea dacotensis.  
Bennettites sp., Carruthers = Cycadeoidea marylandica.
- BENZOIN** Fabric. Enum. Pl. Hort. Helmst, 1763.
- Benzoin Masoni** (Lx.) n. comb.  
Lindera Masoni Lx. Fl. Dak. Gr., p. 96, pl. xviii, f. 9, 10, 1892.  
Dakota group: Kansas.
- Benzoin antiquum ?** Heer. Fl. Tert. Helv., vol. ii, p. 81, pl. xc, f. 1-8, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]. [Not later mentioned by Lesquereux.]  
—— ? : Golden, Colorado.
- Benzoin venustum** (Lx.) n. comb.  
Lindera venusta Lx. Fl. Dak. Gr., p. 95, pl. xvi, f. 1, 2, 1892.  
Dakota group: Kansas.

**BERBERIS** (Tournefort) Linnæus. Gen., ed. i, p. 94, 1737.

*Berberis simplex* Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**BERCHEMIA** Necker. Elem., vol. ii, p. 122, 1790.

*Berchemia multinervis* (Al. Br.) Heer. Fl. Tert. Helv., vol. iii, p. 77, pl. cxxiii, f. 9-18, 1859; Lx., Tert. Fl., p. 277, pl. lii, f. 9, 10, 1878; Ward, Bull. U. S. Geol. Surv. no. 37, p. 73, pl. xxxiii, f. 1 [non f. 2], 1887.

*Rhamnus multinervis* Al. Br. In Buckl. Geol., vol. i, p. 513, 1836.

*Berchemia parviflora* Lx. Am. Journ. Sci., vol. xlv., 2d ser., p. 207, 1868.

Fort Union group: Bull Mountains, Montana.

Denver group: Golden, Sedalia, Colorado.

Laramie group: Raton Mountains, New Mexico ?.

Miocene: John Day Valley, Oregon.

*Berchemia multinervis* (Al. Br.) Ward=*Rhamnus goldianus*.

*Berchemia parvifolia* Lx.=*Berchemia multinervis*.

**BETULA** (Tournefort) Linnæus. Syst., ed. i, 1735.

*Betula æqualis* L. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 2., pl. i, f. 2-4, 1878.

Miocene: Chalk Bluffs, California.

*Betula alaskana* Lx. Proc. U. S. Nat. Mus., vol. v, p. 446, pl. vi, f. 14, 1882 [1883].

Eocene?: Chignik Bay, Alaska.

*Betula angustifolia* Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

*Betula basiserrata* Ward. Bull. U. S. Geol. Surv. no. 37, p. 32, pl. xiv, f. 4, 1887.

Fort Union group: Seven Mile Creek, Montana.

*Betula beatriciana* Lx. Am. Journ. Sci., vol. xlvi, p. 95, 1868.

Dakota group: Beatrice, Nebraska.

*Betula caudata* Göpp. Lx.=*Betula Stevensoni* Lx.

*Betula coryloides* Ward. Bull. U. S. Geol. Surv. no. 37, p. 31, pl. xiv, f. 3, 1887.

Fort Union group: Seven Mile Creek, Montana.

*Betula elliptica* Sap. Climat et Vég. Tert., p. 160, 1861; Lx., Cret. and Tert. Fl., p. 242, pl. li, f. 6, 1883.

Miocene: John Day Valley, Oregon.

*Betula fallax* Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

*Betula florissanti* Lx. Cret. and Tert. Fl., p. 150, pl. xxvii, f. 11, 1883.

Green River group: Florissant, Colorado.

*Betula Göpperti* Lx.=*Betula Stevensoni*.

*Betula gracilis*? Ludw. Paleontogr., vol. viii, p. 99, pl. xxxii, f. 3-6, 1861; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874]; Tert. Fl., p. 138, pl. xvii, f. 20, 1878.

Denver group: Golden, Colorado.

**Betula grandifolia** Ett. Foss. Fl. v. Bilin: Denkschr. Wien. Akad., vol. xxvi, p. 123, pl. xiv, f. 23, 25, 1867; Heer., Fl. Foss. Alaska, p. 29, pl. v, f. 8, 1868.

Eocene?: Port Graham, Alaska.

**Betula heterodonta** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Betula lutea**? Mx. f. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 70, 1896.

Pleistocene: Besserers Wharf, Ottawa River.

**Betula MacClintockii** Cramer in Heer. Fl. Foss. Arct., vol. i, p. 174, pl. xxxiv, f. 4a, b; xxxix, f. 1-9, 1868.

Tertiary: Banks Land.

**Betula nigra** L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

**Betula parce-dentata** Lx. Cret. and Tert. Fl., p. 242, pl. 1, f. 12, 1883.

Miocene: John Day Valley, Oregon.

**Betula perantiqua** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 27, 1882 [1883].

Upper Cretaceous: Baynes Sound, Port McNeill.

**Betula prisca** Ett. Foss. Fl. v. Wien., p. 11, pl. i, f. 15-17, 1851; Ward, Bull. U. S. Geol. Surv., no. 37, p. 31, pl. xiv, f. 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Eocene?: Alaska.

**Betula Schimperi** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 45, 1888.

Denver group: Golden, Colorado.

**Betula Stevensonii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 139, pl. xviii, f. 1-5, 1878.

*Betula Göpperti* Lx. Tert. Fl., p. 138, pl. xvii, f. 21-23, 1878.

*Betula*? *caudata*? Göpp. Lx. Ann. Rept. op. cit., p. 293, 1871 [1872].

Laramie group?: Carbon and Evanston, Wyoming; British Columbia.

**Betula truncata** Lx. Cret. and Tert. Fl., p. 150, pl. xxviii, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

**Betula Vogdesii** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 312, 1874 [1876]; Tert. Fl., p. 137, pl. xvii, f. 18, 19, 1878.

——: Fort Fetterman.

**Betula** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Fossil wood.]

Canadian upper Laramie: Souris River.

**Betula** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, append. i, p. 68, 1873.

Cretaceous: Vancouver Island, British Columbia.

**Betula** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, 1882 [1883].

——: Peace River, Northwest Territory.

**Betula** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.  
[Wood.]

Belly River series: Ribstone Creek, Canada.

Fort Pierre series: Swift Current, Canada.

**Betula?** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 30, 1890.

Eocene?: Similkameen Valley, British Columbia.

**Betula** sp., Heer. Fl. Foss. Arct., vol. i, p. 137, pl. xxiii, f. 10, 1868.

Miocene?: Mackenzie River.

**BETULITES** Göppert. De Floribus in Statu Fossili, p. 22, Breslau, 1837.

**Betulites denticulata** Heer. Phyll. crét. d. Nebr., p. 15, pl. iv, f. 5, 6, 1866.

Dakota group: Blackbird Hill, Nebraska.

**Betulites populifolius** Lx. Fl. Dak. Gr., p. 64, pl. vi, f. 1, 2, 1892.

Dakota group: Kansas.

**Betulites rugosus** Lx. Fl. Dak. Gr., p. 65, pl. vi, f. 3-5, 1892.

Dakota group: Kansas.

**Betulites Snowii** Lx. Fl. Dak. Gr., p. 64, pl. v, f. 1-4, 1892.

Dakota group: Kansas.

**Betulites Westii** Lx. Fl. Dak. Gr., p. 60, pl. iv, f. 1-22; pl. v, f. 5-14, 1892.

Dakota group: Kansas.

**Betulites Westii crassus** Lx. Fl. Dak. Gr., p. 63, pl. v, f. 15-17, 1892.

Dakota group: Kansas.

**Betulites Westii cuneatus** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 8, 1892.

Dakota group: Kansas.

**Betulites Westii grewiopsideus** Lx. Fl. Dak. Gr., p. 63, pl. lxiv, f. 10, 1892.

Dakota group: Kansas.

**Betulites Westii inæquilateralis** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 10-13, 1892.

Dakota group: Kansas.

**Betulites Westii lanceolatus** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 14, 1892.

Dakota group: Kansas.

**Betulites Westii latifolius** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 9-11, 1892.

Dakota group: Kansas.

**Betulites Westii multinervis** Lx. Fl. Dak. Gr., p. 62, pl. iv, f. 20-23, 1892.

Dakota group: Kansas.

**Betulites Westii oblongus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 17-19, 1892.

Dakota group: Kansas.

**Betulites Westii obtusus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 5-8, 1892.

Dakota group: Kansas.

**Betulites Westii populoides** Lx. Fl. Dak. Gr., p. 63, 1892.

Dakota group: Kansas.



- Betulites Westii quadratifolius** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 9, 1892.  
Dakota group: Kansas.
- Betulites Westii reniformis** Lx. Fl. Dak. Gr., p. 62, pl. v, f. 5, 1892.  
Dakota group: Kansas.
- Betulites Westii rhomboidalis** Lx. Fl. Dak. Gr., p. 62, pl. v. f. 6, 7, 1892.  
Dakota group: Kansas.
- Betulites Westii rotundatus** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 12-16, 1892.  
Dakota group: Kansas.
- Betulites Westii subintegrifolius** Lx. Fl. Dak. Gr., p. 61, pl. iv, f. 1-4, 1892.  
Dakota group: Kansas.
- Betulites**, stipules of, Lx. Fl. Dak. Gr., p. 65, pl. v, f. 18, 1892.  
Dakota group: Kansas.
- BLECHNUM** Linnæus. Sp. Pl., ed. ii, p. 1077, 1753.
- Blechnum Göpperti** Ett. Farnkräuter, p. 153, 1865; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 283, 1871 [1872].  
[Not afterwards recognized by Lesquereux.]  
Green River group?: Henry's Fork.
- BOMBAX** Linnæus. Sp. Pl., ed. i, p. 511, 1753.
- Bombax virginianensis** Font. Potomac Fl., p. 310, pl. cli, f. 4, 1889.  
Potomac formation: Near Brooke, Virginia.
- BRACHYPHYLLUM** Brongniart. Prodrome d'une Hist. d. Vég. Foss., Paris, 1828, p. 109.
- Brachyphyllum crassicaule** Font. Potomac Fl., p. 221, pl. c, f. 4; cix, f. 1-7; cx, f. 1-3; cxi, f. 6-7; cxii, f. 6-8; clxviii, f. 9, 1889.  
Potomac formation: Trents Reach, near Brooke, and near Dutch Gap Canal, Virginia.
- Brachyphyllum crassum** Lx. = **Brachyphyllum macrocarpum**.
- Brachyphyllum macrocarpum** Newby. Fl. Amboy Clays, p. 51, [foot-note] 1895 [1896].  
**Brachyphyllum crassum**\* Lx. Proc. U. S. Nat. Mus., vol. x, p. 34, 1887; Fl. Dak. Gr., p. 32, pl. ii, f. 5, 1891; Newby, Fl. Amboy Clays, p. 51, pl. vii, f. 1-7, 1895 [1896].  
**Thuites crassus** Lx. Cret. and Tert. Fl., p. 32, 1883 [1884].  
**Brachyphyllum** sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 137, 1897.  
[\* **B. crassum** Lx., antedated by **B. crassum** of Tenison-Woods, 1883.]  
Dakota group: Kansas.  
Amboy clay: New Jersey.  
Montana formation: Harper Station, Wyoming; North Fork Dutton Creek, Wyoming.  
Age?: Upper Kanab Valley, Utah.
- Brachyphyllum parceramosum** Font. Potomac Fl., p. 223, pl. cx, f. 4, 1889.  
Potomac formation: Near Telegraph Station, Virginia.

**Brachyphyllum texense** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 269, pl. xxxviii, f. 3-5; pl. xxxix, f. 1, 1a, 1893.

Trinity division: Glenrose, Texas.

**Brachyphyllum** sp. (Cone) Font. Potomac Fl., p. 224, pl. clxviii, f. 2, 1889.

Potomac formation: Trents Reach, Virginia.

**Brachyphyllum** sp. (Cone), Font. Potomac Fl., p. 223, pl. cxxxv, f. 8, 1889.

Potomac formation: Trents Reach, Virginia.

**Brachyphyllum** sp. (Cone), Font. Potomac Fl., p. 224, pl. cxxxv, f. 9, 1889.

Potomac formation: Trents Reach, Virginia.

**Brachyphyllum** sp. Kn. (1897)=**Brachyphyllum macrocarpum**.

**BRASENIA** Schreber. Gen Pl., p. 372, 1789.

**Brasenia antiqua** Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883.]

Eocene: Green River, Wyoming.

**Brasenia antiqua** Dn.=**Nelumbo Dawsoni**.

**Brasenia peltata** Pursh. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890.

Pleistocene: Greens Creek, Ottawa.

**BROMELIA** (Plumier) Linnæus. Syst., ed. i, 1735.

**Bromelia? tenuifolia** Lx. Fl. Dak. Gr., p. 41, pl. i, f. 13, 1891.

Dakota group: Kansas.

**BROMUS** Dillenius ex Linnæus. Syst., ed. i, 1735.

**Bromus ciliatus** L. Penhallow, Bull. Geol. Soc. Am. vol. i., p. 332, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

**BRYUM** (Dillenius) Linnæus. Gen. Pl., p. 323, 1737.

**Bryum** sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**BUMELIA** Swartz. Prodr. Veg. Ind. Oce., p. 49, 1788.

**Bumelia florissanti** Lx. Cret. and Tert. Fl., p. 174, pl. xxxiv, f. 4, 5, 1883.

Green River Group: Florissant, Colorado.

**Bumelia Marcouana** (Heer.) Lx.=**Liriodendron primævum**.

**Bumelia? rhomboidea** Lx. Fl. Dak. Gr., p. 113, pl. li, f. 10, 1892.

Dakota Group: Kansas.

**CABOMBA** Aublet. Pl. Gui., vol. i, p. 321, 1775.

**Cabomba gracilis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Fort Union group: Fort Union, North Dakota.

**Cabomba grandis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Fort Union group: Fort Union, North Dakota.

**CÆSALPINIA** Linnæus. Sp. Pl., p. 380, 1753.

**Cæsalpinia Cookiana** Hollic in Newby. Fl. Amboy Clays, p. 94, pl. xlii, f. 49, 50, 1895 [1896].

Amboy clay: New Jersey.

*Cæsalpinia linearis* Lx.=*Mimosites linearifolius*.

**CALAMOPSIS** Heer. Fl. Tert. Helv., vol. iii, p. 169, 1859.

**Calamopsis Danai** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 411, pl. xiv, f. 1-3, 1869.

Eolignitic: Mississippi.

*Callicoma microphylla*? Ett. Lx.=*Myrica drymeja*.

**CALLISTEMOPHYLUM** Ettingshausen. Tert. Fl. v. Häring in Tirol, p. 83, 1853.

**Callistemophyllum Heerii** Ett. Sitzb. Wien. Akad., vol. lv, abt. i, p. 261, pl. iii, f. 9, 1867; Lx, Fl. Dak. Gr., p. 138, pl. xxxviii, f. 8, 1892.

Dakota group: Kansas.

**Callistemophyllum latum** Dn. Trans. Roy. Soc. Canada, vol. vii, sec., iv, p. 72, pl. x, f. 8, 1889.

Miocene?: Mackenzie River.

**Callitris?** sp., Font. Potomac Fl., p. 272, pl. clxix, f. 8, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**CALYCITHES** [**CALYCITES** Auct.] Massalongo. Schizzo Geognostico, p. 72, Verona, 1850.

**Calycites diospyrifomis** Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 39-41, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

*Calycites hexaphylla* Lx.=*Diospyros Wodani*.

**Calycites parvus** Newby. Fl. Amboy Clays, p. 131, pl. xlvi, f. 28, 29, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Calycites polycephalus** Newby. Later Extinct Floras, p. 31, 1868.

[Not described, figured, or afterwards referred to.]

**Calycites** sp., Lx. Fl. Dak. Gr., p. 221, pl. xxii, f. 8, 1892.

Dakota group: Kansas.

**CAREX** (Dillenius) Linnæus. Syst., ed. i, 1735.

**Carex aquatilis** Whal. Macoun in Coleman, Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

**Carex Berthoudi** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]; Tert. Fl., p. 92, pl. ix., f. 3, 4, 1878.

Denver group: Golden, Colorado.

**Carex burrardiana** Penhallow in Dn. Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 145, pl. iv., f. 6, 1895-96.

Eocene: Burrard Inlet, Vancouver City, British Columbia.

**Carex majellanica** Lam. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 325, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

**Carex servata** Heer. Fl. Foss. Alask., p. 24, pl. i, f. 13, 13c, d, 1869.

Eocene?: Port Graham, and Herendeen Bay, Alaska.

**Carex utriculata** Boott. Macoun in Coleman, Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

**Carex vancouverensis** Penhallow in Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 144, pl. iv, f. 5, 1895-96.

Eocene: Stanley Park, British Columbia.

**CARPINUS** Linnæus. Gen., ed. i, p. 292, 1737.

**Carpinus attenuata** Lx. Cret. and Tert. Fl., p. 152, pl. xxvii, f. 10, 1883.

Green River group: Florissant, Colorado.

**Carpinus fraterna** Lx. Cret. and Tert. Fl., p. 152, pl. xxvii, f. 12-14, 1883.

Green River group: Florissant, Colorado.

**Carpinus grandis** Ung. Synop. Pl. Foss., p. 220, 1845; Lx., Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 151?, 1861; Newby, Bost. Journ. Nat. Hist., vol. vii., p. 519, 1863; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 143, pl. xix, f. 9; lxiv, f. 8-10, 1878.

*Quercus elkoana* Lx. Ann. Rept., p. 413, 1873 [1874].

Miocene: John Day Valley, Oregon.

Eocene: Cook Inlet, Alaska; Stump Lake, British Columbia;

? Brandon, Vermont.

Green River group: Florissant, Colorado; Elko Station, Nevada.

**Carpinus pyramidalis** (Göpp.) Heer. Fl. Tert. Helv., vol. iii, p. 177, pl. lxxxvii, f. 7b.; cl, f. 27, 28, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 18, 1888.

Miocene: John Day Valley, Oregon.

**CARPITES** Schimper. Pal. Vég., vol. iii, p. 421, 1874.

**Carpites bursæformis** Lx. Tert. Fl., p. 306, pl. lx, f. 30, 1878.

Laramie group: Black Buttes, Wyoming.

**Carpites cocculoides** (Heer.) Lx. Tert. Fl., p. 307, pl. lx, f. 32-35, 1878.

*Carpolithes cocculoides* Heer. Fl. Foss. Arct., vol. ii, p. 484, pl. lii, f. 9, 1869.

Laramie group?: Carbon, Wyoming.

**Carpites cocculoides major** Lx. Tert. Fl., p. 307, pl. lx, f. 38, 39, 1878.

Laramie group?: Carbon, Wyoming.

- Carpites coffeæformis** Lx. Tert. Fl., p. 303, pl. lx, f. 6, 7, 1878.  
Denver group: Golden, Colorado.
- Carpites coniger** Lx. Fl. Dak. Gr., p. 221, pl. lxii, f. 5, 1892.  
Dakota group: Kansas.
- Carpites cordiformis** Lx. Fl. Dak. Gr., p. 220, pl. xxii, f. 9, 1892.  
Dakota group: Kansas.
- Carpites costatus** Lx. Tert. Fl., p. 303, pl. lx, f. 5, 1878.  
Denver group: Golden, Colorado.
- Carpites fragariæformis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.  
Miocene: John Day Valley, Oregon.
- Carpites gemmaceus** Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 19, 1883.  
Green River group: Florissant, Colorado.
- Carpites glumæformis** Lx. Tert. Fl., p. 304, pl. xxxv, f. 4d; pl. lx, f. 14-17, 1878.  
Laramie group: Black Buttes, Wyoming.
- Carpites laurineus** Lx. Tert. Fl., p. 304, pl. lx, f. 20, 21, 1878.  
Laramie group: Golden, Colorado.
- Carpites ligatus** Lx. Tert. Fl., p. 307, pl. lx, f. 36, 36a, 1878.  
Laramie group: Placer Mountain, New Mexico.
- Carpites lineatus** (Newby.) Lx. Tert. Fl., p. 302, pl. lx, f. 1-1d, 1878.  
Carpolithus lineatus Newby. Later Extinct Floras, p. 31, 1868.  
Laramie group?: Evanston, Wyoming.
- Carpites liriophylli** ? Lx. Cret. and Tert. Fl., p. 77, pl. xi, f. 5, 1883.  
Dakota group: Morrison, Colorado.
- Carpites milioides** Lx. Cret. and Tert. Fl., p. 204, pl. xl, f. 18, 1883.  
Green River group: Florissant, Colorado.
- Carpites minutulus** Lx. Tert. Fl., p. 305, pl. lx, f. 25, 1878.  
Denver group: Golden, Colorado.
- Carpites mitratus** Lx. Tert. Fl., p. 304, pl. lx, f. 18, 19, 1878.  
Laramie group: Black Buttes, Wyoming.
- Carpites oviformis** Lx. Tert. Fl., p. 302, pl. xxx, f. 6a, 1878.  
Denver group: Golden, Colorado.
- Carpites Pealei** Lx. Tert. Fl., p. 306, pl. lx, f. 31, 1878.  
Green River group: Florissant, Colorado.
- Carpites rhomboidalis** Lx. Tert. Fl., p. 306, pl. lx, f. 28, 29, 1878.  
Laramie group: Golden, Colorado.
- Carpites rostellatus** Lx. = Ginkgo.
- Carpites spiralis** Lx. Tert. Fl., p. 306, pl. lx, f. 27, 1878.  
Carpolithes spiralis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872].  
Laramie group: Placer Mountain, New Mexico.
- Carpites tiliaceus** (Heer.) Lx. Fl. Dak. Gr., p. 221, pl. xxii, f. 6, 7, 1892.  
Carpolithes tiliaceus Heer. Mioc. Balt. Fl., p. 101, pl. xxx, f. 42, 43, 1869.  
Dakota group: Kansas.

**Carpites triangulosus** Lx. Tert. Fl., p. 302, pl. lx, f. 4; p. lxxii, f. 19, 20, 1878.

Denver group: Golden, Colorado.

Laramie group?: Black Buttes, Wyoming?; Carbon, Wyoming.

**Carpites utahensis** Lx. Tert. Fl., p. 305, pl. lx, f. 22, 1878.

Laramie group?: Evanston, Wyoming.

**Carpites valvatus** Lx. Tert. Fl., p. 307, pl. lx, f. 37, 1878.

Laramie group?: Fort Steele, Wyoming.

**Carpites verrucosus** Lx. Tert. Fl., p. 305, pl. lx, f. 23, 1878.

Laramie group: Black Buttes, Wyoming.

**Carpites Viburni** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 305, pl. lx, f. 26, 26a, 1878.

Laramie group: Black Buttes, Wyoming.

**Carpites?** sp., Lx. Fl. Dak. Gr., p. 221, 1892.

Carpolithes? Lx. Cret. Fl., p. 114, pl. xxvii, f. 5; pl. xxx, f. 11, 1874.

Dakota group: Kansas?.

**CARPOLITHES** Schlotheim. Petrefactenkunde, p. 418, 1820.

Carpolithes arachioides Lx.=Leguminosites? arachioides.

**Carpolithes brandoniana** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, 1861.

——: Brandon, Vermont.

**Carpolithes brandoniana elongata** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 111–113, 1861.

——: Brandon, Vermont.

**Carpolithes brandoniana obtusa** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 114–117, 1861.

——: Brandon, Vermont.

**Carpolithes bursæformis** Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 146, 147, 1861.

——: Brandon, Vermont.

**Carpolithes cocculoides?** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 484, pl. lii, f. 9, 9b, 1869; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 290, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Carbon, Wyoming.

**Carpolithes compositus** Lx.=Palmocarbon compositum.

**Carpolithes dentatus** Penhallow in Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 26, 1890.

Eocene?: Stump Lake, British Columbia.

**Carpolithes falcatus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

**Carpolithes fissilis** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861; Geol. Vt., vol. ii, p. 713, f. 118, 119, 124, 1861.

——: Brandon, Vermont.

**Carpolithes Grayana** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861;  
Geol. Vt., vol. ii, p. 714, f. 122, 1861.

——: Brandon, Vermont.

**Carpolithes horridus** Dn.=**Antholithes horridus**.

**Carpolithes irregularis** Lx. Am. Journ. Sci., vol. xxxii, p. 356, 1861;  
Geol. Vt., vol. ii, p. 714, f. 120, 121, 123, 125, 128, 1861.

——: Brandon, Vermont.

**Carpolithes Lescurii** Hitchcock. Portland Soc. Nat. Hist., vol. i, pt. 1, p. 95, pl. i, f. 5, 1862.

——: Brandon, Vermont.

**Carpolithes lineatus** Newby. Later Extinct Floras, p. 31, 1868; Ill. Cret. and Tert. Pl., pl. xxv, f. 1, 1878; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872].

Laramie group?: Evanston, Wyoming.

**Carpolithes (Zamites) meridionalis** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, pl. x, f. 42, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Carpolithes mexicanus** Lx.=**Palmocarpus mexicanum**.

**Carpolithes osseus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873]. [Not afterwards recognized by its author.]

Eocene?: Elk Creek, Yellowstone National Park.

**Carpolithes palmarum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 382, 1872 [1873]. [Not afterwards mentioned by its author.]

——?: Golden, Colorado.

**Carpolithes seminulum** Heer. Fl. Foss. Arct., vol. i, p. 139, pl. xxiii, f. 11, 1868.

Miocene?: Mackenzie River.

**Carpolithes spiralis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Placer Mountain, New Mexico.

**Carpolithes** Dn. Rept. on Geol. and Res. near 49th Parallel, appen. A, p. 330, 1875.

Lignitic Tertiary: West of Woody Mountain.

**Carpolithes venosus?** Sternb. Vers., vol. ii, p. 208, pl. 58, f. 18-20, 1833; Lx., Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 159-160, 1861.

——: Brandon, Vermont.

**Carpolithes** sp., Dn. Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, 1889.

Eocene?: Mackenzie River.

**Carpolithes** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 29, 1882 [1883].

Upper Cretaceous: Baynes Sound.

**Carpolithes** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874].

Green River group: Near Florissant, Colorado.

**Carpolithes** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 15, 1892.

Kootanie: Anthracite, ? British Columbia.

**CARPOLITHUS agglomeratus** Font. Potomac Fl., p. 267, pl. cxxxiv, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Carpolithus brookensis** Font. Potomac Fl., p. 268, pl. cxxxv, f. 2, 4; cxxxvi, f. 6; clxvii, f. 6, 1889.

Potomac formation: Near Brooke and near Dutch Gap Canal, Virginia.

**Carpolithus conjugatus** Font. Potomac Fl., p. 267, pl. cxxxiv, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

**Carpolithus curvatus** Font. Potomac Fl., p. 269, pl. cxxxv, f. 17, 1889.

Potomac formation: Fredericksburg, Virginia.

**Carpolithus drupæformis** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 134, pl. xi, f. 4, 4a, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Carpolithus fasciculatus** Font. Potomac Fl., p. 265, pl. cxxxiv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Carpolithus floribundus** Newby. Fl. Amboy Clays, p. 133, pl. xlvi, f. 17-21, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Carpolithus geminatus** Font. Potomac Fl., p. 267, pl. cxxxiv, f. 10, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Carpolithus Harveyi** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 3, 1893.

Trinity division: Glenrose, Texas.

**Carpolithus hirsutus** Newby. Fl. Amboy Clays, p. 134, pl. xlvi, f. 14, 14a, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Marthas Vineyard.

**Carpolithus latus** Font. Potomac Fl., p. 269, pl. cxxxv, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Carpolithus mucronatus** Font. Potomac Fl., p. 270, pl. cxxxvi, f. 15, 1889.

Potomac formation: Near Brooke, Virginia.

**Carpolithus obovatus** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 5, 1893.

Trinity division: Glenrose, Texas.

**Carpolithus ovæformis** Newby. Fl. Amboy Clays, p. 134, pl. xlvi, f. 15, 16, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.



**Carpolithus pruniformis** Newby. Fl. Amboy Clays, p. 133, pl. xlv, f. 42, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Carpolithus sessilis** Font. Potomac Fl., p. 269, pl. cxxxvi, f. 9, 1889.  
Potomac formation: Near Dutch Gap Canal, Virginia.

**Carpolithus spinosus** Newby. Proc. U. S. Nat. Mus., vol. v, p. 514, 1882 [1883].

Laramie group: Purgatory River, New Mexico.

**Carpolithus ternatus** Font. Potomac Fl., p. 265, pl. cxxxiv, f. 2-4, 6, 8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Carpolithus virginianensis** Font. Potomac Fl., p. 266, pl. cxxxiv, f. 11-14; cxxxv, f. 1, 5; clxviii, f. 7, 1889.

Potomac formation: Near Telegraph and Station near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

**Carpolithus woodbridgensis** Newby. Fl. Amboy Clays, p. 133, pl. xlv, f. 22, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Carpolithus** sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 38, pl. i, f. 12, 1892.

Cretaceous: Kreischerville, Staten Island.

*Carya antiquorum* Newby. = *Hicoria antiquorum*.

*Carya bilinea* (Ung.) Ett. = *Hicoria juglandiformis*.

*Carya Bruckmani* Heer. = *Hicoria Bruckmani*.

*Carya elænoidea* (Ung.) Heer. = *Hicoria elænoidea*.

*Carya Heerii* (Ett.) Heer. Fl. Tert. Helv., vol. iii, p. 93, 1859; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

*Juglans Heerii* Ett. Foss. Fl. v. Tokay: Sitzb. Wien. Akad. vol. xi, p. 35, [811] pl. ii, f. 5-7, 1853.

Green River group?: Green River, Wyoming.?

*Carya olivæformis* Nutt. Lx. = *Hicoria pecan*.

*Carya rostrata* (Göpp.) Schimp. = *Hicoria rostrata*.

*Carya vermontana* Lx. = *Hicoria vermontana*.

*Carya verrucosa* Lx. = *Hicoria verrucosa*.

*Carya* sp., Dn. = *Hicoria* sp.

**CASSIA** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Cassia Fischeri** Heer. Fl. Tert. Helv., vol. iii, p. 119, pl. cxxxvii, f. 62-65, 1859; Lx., Cret. and Tert. Fl., p. 202, 1883.

Green River group: Florissant, Colorado.

**Cassia concinna**? Heer. Fl. Tert. Helv., vol. iii, p. 122, pl. cxxxviii, f. 41, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1872 [1873]; Tert. Fl., p. 299, pl. lix, f. 8, 8a, 1878.

Laramie group: Evanston, Wyoming.

**Cassia obtusa** Kn. 18th Ann. Rept. U. S. Geol. Surv., pt. iii, p. 731, pl. c, f. 4, 5, 1898.

Payette formation: Marsh, Idaho.

**Cassia phaseolites** ? Ung. Denkschr. Wien. Akad., vol. ii, p. 188, pl. lxxv, f. 1-5; lxxvi, f. 1-9, 1850; Lx, Proc. U. S. Nat. Mus., vol. xi, p. 16, 1888.

Miocene: John Day Valley, Oregon.

**Cassia polita** Lx. Fl. Dak. Gr., p. 146, 1892.

Dakota group: Kansas.

**Cassia problematica** Lx. Fl. Dak. Gr., p. 146, pl. xxxviii, f. 3, 1892.

Dakota group: Kansas.

**CASTALIA** Salisbury. In Ann. Bot., vol. ii, p. 71, 1805.

**Castalia** sp. (Lx.) n. comb.

*Nymphæa* sp., Lx. Proc. U. S. Nat. Mus., vol. x, p. 45, 1887.

———: "Mouth of Indian Creek."

**Castalia** sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**Castalia** sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**Castalia** sp., Kn. Bull. Geol. Soc. Am., vol. 8, p. 140, 1897.

Laramie group?: North Fork Dutton Creek, Wyoming.

**CASTANEA** Adanson. Fam. Pl., vol. ii, p. 375, 1763.

**Castanea atavina** Ung. Denkschr. Wien. Akad., vol. ii, p. 164, pl. xxxi, f. 5-7, 1850; Lx., Cret. and Tert. Fl., p. 247, pl. li, f. 2, 1883.

Miocene: John Day Valley, Oregon.

**Castanea castaneæfolia** (Ung.) n. comb.

*Fagus castaneæfolia* Ung. Chlor. Prot., p. 104, pl. xxviii, f. 1, 1847.

*Castanea Unger* Heer. Phil. Trans., vol. 159, p. 470, pl. xlv, f. 1-3; xlv, f. 8, 1869; Lx., Cret. and Tert. Fl., p. 246, pl. lii, f. 1, 3-7, 1883.

Miocene?: Corral Hollow, California; John Day Valley, Oregon.

Eocene?: Alaska; Cherry Creek, Oregon; Kamloops, British Columbia.

**Castanea intermedia** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 386, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 164, pl. xxi, f. 7, 1878.

Green River group: Middle Park, Colorado.

**Castanea nana** ? Elliott. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859 = *Castanea pumila*.

**Castanea pumila** Miller. Dict. ed. 8, 1768; Kn., Am. Geol., vol. xviii, p. 371, 1896.

*Castanea nana* ? Elliott. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene?: Banks of Mississippi River, near Columbus, Kentucky.

Glacial: Morgantown, West Virginia.

*Castanea Unger* Heer = *Castanea castaneæfolia*.

**Castanea** sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 27, pl. i, f. 8, 1886 [1887].

Canadian Upper Laramie: Souris River.

*Castanea* sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.  
Miocene?: Bridgeton, New Jersey.

**CASTANOPSIS** Spach. Hist. Veg. Phan., vol. xi, p. 185, 1842.

*Castanopsis chrysophylloides* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 9, pl. ii, f. 10, 1878.

Miocene: Chalk Bluffs, California.

**CASUARINA** Linnaeus. Amœn. Acad., vol. iv, p. 143, 1759.

*Casuarina Covillei* Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 353, pl. iii, f. 2, 1895.

Potomac formation: Mount Vernon, Virginia.

**CATALPA** Scopoli. Introd., p. 170, 1771.

*Catalpa crassifolia* Newby. Later Extinct Floras, p. 56, 1868.

Canadian upper Laramie: Bow River, Canada.

Fort Union group: Yellowstone River, Montana.

**CAUDEX** Lesquereux. Cret. and Tert. Fl., p. 91, 1883.

*Caudex spinosus* Lx. Cret. and Tert. Fl., p. 91, 1883.

*Caulinites spinosa* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 422, 1872 [1873].

Dakota group: Kansas.

**CAULERPITES** (Brongniart) Sternberg. Vers., vol. ii, p. 20, 1833.

[Fucoides § ix. Caulerpites Brongniart, Hist. Vég. Foss., p. 72, 1828.]

*Caulerpites fastigiatus* Sternb. = *Sequoia fastigiata*.

*Caulerpites incrassatus* Lx. Tert. Fl., p. 40, pl. i, f. 11, 12, 1878.

*Delesseria incrassata* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 374, 1872 [1873].

Laramie group: Raton Mountains, New Mexico.

**Caulerpites lingulatus** (Lx.) n. comb.

*Delesseria lingulata* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 374, 1872 [1873]; Tert. Fl., p. 41, 1878.

Laramie group: Raton Mountains, New Mexico.

**CAULINITES** Brongniart. Prod. Hist. Vég. Foss., p. 115, 1828.

*Caulinites Beckeri* Lx. Proc. U. S. Nat. Mus., vol. x, p. 36, pl. i, f. 3; ii, f. 2-4, 1887.

Pleistocene: Clear Lake, California.

*Caulinites fecundus* Lx. = *Onoclea fecunda*.

*Caulinites sparganioides* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]; Tert. Fl., p. 99, pl. xiv, f. 4-11, 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group: Black Buttes, Wyoming.

*Caulinites spinosa* Lx. = *Caudex spinosus*.

**CEANOOTHUS** Linnaeus. Act. Soc. Sci. Upsal., p. 77, 1741.

*Ceanothus! americanus?* L. Lesquereux. Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

*Ceanothus cinnamomoides* Lx. = *Zizyphus cinnamomoides*.

**Ceanothus cretaceous** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 33, 1882 [1883].

Upper Cretaceous: Baynes Sound, Port McNeill, Vancouver Island.

**Ceanothus fibrillosus** Lx. = **Zizyphus fibrillosus**.

**Ceanothus Meigsii** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 419, pl. xix, f. 5-7, 1869.

Eolignitic: Mississippi; Lagrange, Tennessee.

**Ceanothus?** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 84, f. (in text) 14, 1890 [1891].

Eocene?: North Fork Similkameen River, British Columbia.

**CEBATHA** Forskal. Fl. Ægypt., p. 171, 1775.

**Cebatha Haydeniana** (Ward) n. comb.

*Cocculus Haydenianus* Ward. Bull. U. S. Geol. Surv., no. 37, p. 100, pl. xlvii, f. 1-4; pl. xlviii, f. 1, 1887.

Fort Union group: Burns's Ranch and Iron Bluff, Montana.

**CEDROXYLON** Kraus in Schimp. Trait. Pal. Vég., vol. ii, p. 370, 1870.

**Cedroxylon** sp., Dn. Rept. on Geol. and Res. near 49th Parallel, appen. A, p. 331, pl. xv, f. 1, 1875.

Lignitic Tertiary: "Forty-ninth parallel."

**CELASTRINITES** Saporta. Ann. sci. nat. Bot., 5th ser., vol. iii, p. 52, 1865.

**Celastrinites ambiguus** (Lx.) n. comb.

*Celastrinites laevigatus* Lx. Tert. Fl., p. 269, pl. xvii, f. 16, 16a, 1878.

*Myrica ambigua* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872].

Livingston beds: Bozeman coal field, Montana.

**Celastrinites artocarpidioides** Lx. Tert. Fl., p. 268, pl. xxxv, f. 3, 1878.

*Artocarpidium olmediaefolium?* Ung. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv., Terr., p. 400, 1873 [1874].

Denver group: Golden, Colorado.

**Celastrinites elegans** Lx. Cret. and Tert. Fl., p. 185, pl. xxxi, f. 9, 10, 1883.

Green River group: Florissant, Colorado.

**Celastrinites laevigatus** Lx. = **Celastrinites ambiguus**.

**CELASTROPHYLLUM** Göppert. Die Tertiärfloora auf d. Insel Java., 1854, p. 52. [This name was mentioned as a nomen nudum by Göppert in Neues Jahrb., 1853, p. 435.]

**Celastrorphyllum acutidens** Font. Potomac Fl., p. 305, pl. clvi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

**Celastrorphyllum angustifolium** Newby. Fl. Amboy Clays, p. 100, pl. xiv, f. 8-17, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Celastrophyllum arcinerve** Font. Potomac Fl., p. 304, pl. cxlvi, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Celastrophyllum Benedeni** Sap. and Mar. Essai. Veg. Marnes Heers. Gelind., p. 67, pl. x, f. 6; pl. xii, f. 1, 2, 1874; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. 177, f. 3, 4, 1894.

Cretaceous: Glen Cove, Long Island.

**Celastrophyllum brittonianum** Hollick in Newby. Fl. Amboy Clays, p. 105, pl. xliii, f. 37, 38, 46, 47, 1895 [1896].

Amboy clay: New Jersey.

**Celastrophyllum brookense** Font. Potomac Fl., p. 305, pl. clviii, f. 8; clx, f. 7, 1889.

Potomac formation: Virginia.

**Celastrophyllum crenatum** Heer. Fl. Foss. Arct., vol. vii, p. 41, pl. lxii, f. 21, 1883; Newby., Fl. Amboy Clays, p. 99, pl. xlviii, f. 1-19, 1895 [1896].

Amboy clay: South Amboy, and Sayreville, New Jersey.

**Celastrophyllum crassipes** Lx. Fl. Dak. Gr., p. 174, pl. lvii, f. 6, 7, 1892.

Dakota group: Kansas.

**Celastrophyllum cretaceum** Lx. Fl. Dak. Gr., p. 173, pl. xxxviii, f. 12-14, 1892; Newby., Fl. Amboy Clays, p. 100, pl. xlii, f. 13, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

**Celastrophyllum decurrens** Lx. Fl. Dak. Gr., p. 172, pl. xxxvi, f. 1, 1892.

Dakota group: Kansas.

**Celastrophyllum denticulatum** Font. Potomac Fl., p. 306, pl. clxix, f. 10; clxxii, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

**Celastrophyllum ensifolium** Lx. Cret. Fl., p. 108, pl. xxi, f. 2, 3, 1874.

*Magnolia ensifolia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1871 [1872].

Dakota group: Southern Kansas.

**Celastrophyllum grandifolium** Newby. Fl. Amboy Clays, p. 104, pl. xix, f. 8; xxi, f. 1-4, 1895 [1896].

Amboy clay: New Jersey.

**Celastrophyllum Hunteri** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 358, pl. iv, f. 9, 1895.

Potomac formation: Mount Vernon, Virginia.

**Celastrophyllum latifolium** Font. Potomac Fl., p. 306, pl. clxxii, f. 3, 6; clxxiii, f. 13, 1889.

Potomac formation: Baltimore, Maryland.

**Celastrophyllum minus** Hollick in Newby. Fl. Amboy Clays, p. 105, pl. xlii, f. 51, 52, 1895 [1896].

Amboy clay: New Jersey.

**Celastrophyllum myrsinoides** Lx. Fl. Dak. Gr., p. 174, pl. lvii, f. 8, 9, 1892.

Dakota group: Kansas.

**Celastrophyllum Newberryanum** Hollick in Newby. Fl. Amboy Clays, p. 101, pl. xlix, f. 1-27, 1895 [1896]; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiv, f. 1, 1897.

Amboy clay: South Amboy, Sayreville, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Celastrophyllum obliquum** Lx. Fl. Dak. Gr., p. 173, pl. lvii, f. 5, 1892.

Dakota group: Kansas.

**Celastrophyllum obovatum** Font. Potomac Fl., p. 307, pl. clxxii, f. 9, 10, 1889.

Potomac formation: Baltimore, Maryland.

**Celastrophyllum obtusidens** Font. Potomac Fl., p. 305, pl. clvi, f. 5, 1889.

Potomac formation: Near Brooke, Virginia.

**Celastrophyllum proteoides** Font. Potomac Fl., p. 304, pl. cxlvi, f. 5, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Celastrophyllum robustum** Newby. Fl. Amboy Clays, p. 103, pl. xlii, f. 41, 42, 1895 [1896].

Amboy clay: New Jersey.

**Celastrophyllum spatulatum** Newby. Fl. Amboy Clays, p. 103, pl. xlii, f. 43-45, 1895 [1896].

Amboy clay: New Jersey.

**Celastrophyllum tenuinerve** Font. Potomac Fl., p. 306, pl. clxxii, f. 2, 1889.

Potomac formation: Baltimore, Maryland.

**Celastrophyllum undulatum** Newby. Fl. Amboy Clays, p. 102, pl. xxxviii, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

**CELASTRUS** Linnaeus. Gen., ed. i, p. 59, 1737.

**Celastrus alnifolius** Ward. Bull. U. S. Geol. Surv., no. 37, p. 80, pl. xxxv, f. 1, 2, 1887.

Fort Union group: Burns's Ranch, Montana.

**Celastrus arctica** Heer. Fl. Foss. Arct., vol. vii, p. 40, pl. lxi, f. 5d, 5e, 1883; Newby., Fl. Amboy Clays, p. 98, pl. xiii, f. 8-18, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**Celastrus borealis** Heer. Fl. Foss. Alaska, p. 37, pl. x, f. 4, 1869.

Eocene?: Port Graham, Alaska.

**Celastrus curvinervis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 82, pl. xxxvi, f. 3, 4, 1887.

Fort Union group: Burns's Ranch, Montana.

**Celastrus ferrugineus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 78, pl. xxxiv, f. 1-4, 1887.

Fort Union group: Burns's Ranch, Iron Bluff, Montana.

**Celastrus fraxinifolius** Lx. Cret. and Tert. Fl., p. 184, pl. xxxiii, f. 2-4; pl. xl, f. 10, 1883.

Green River group: Florissant, Colorado.

**Celastrus Gaudini** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 54, 1883.

Denver group: Golden, Colorado.

**Celastrus Greithianus** Heer. Fl. Tert. Helv., vol. iii, p. 70, pl. cxxi, f. 63, 1859; Lx., Cret. and Tert. Fl., p. 184, 1883.

Green River group: Florissant, Colorado.

**Celastrus grewiopsis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 81, pl. xxxvi, f. 2, 1887.

Fort Union group: Burns's Ranch, Montana.

**Celastrus Lacoey** Lx. Cret. and Tert. Fl., p. 184, 1883.

Green River group: Florissant, Colorado.

**Celastrus Lindgreni** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 732, pl. xcix, f. 13; c, f. 6, 1898.

Payette formation: Idaho City, Idaho.

**Celastrus ovatus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 81, pl. xxxvi, f. 1, 1887.

Fort Union group: Iron Bluff, Montana.

**Celastrus pterospermoides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 80, pl. xxxv, f. 3-6, 1887.

Fort Union group: Burns's Ranch and Iron Bluff, Montana.

**Celastrus Taurinensis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 79, pl. xxxiv, f. 5, 6, 1887.

Fort Union group: Bull Mountains; Burns's Ranch, Montana.

**Celastrus?** sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 38, pl. i, f. 4, 1892.

Cretaceous: Tottenville, Staten Island.

**Celastrus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 130, 1897.

Montana formation: Harper, Wyoming.

**CELTIS** Tournefort ex Linnæus. Gen., ed. i, p. 337, 1737.

**Celtis brevifolia** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 416, pl. xx, f. 4, 5, 1869.

Eolignitic: Mississippi.

**Celtis McCoshii** Lx. Cret. and Tert. Fl., p. 163, pl. xxxviii, f. 7, 8, 1883.

Green River group: Florissant, Colorado; Uinta County, formerly but erroneously called Randolph County, Wyoming.

**Celtis?** ovata Lx. = *Ampelophyllum ovatum*.

**Celtis parvifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Tertiary: Tongue River, Wyoming.

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**Celtis rugosa** Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].  
Tertiary: Tongue River, Wyoming.

**CEPHALOTAXOPSIS** Fontaine. Potomac Fl., p. 235, 1889.

**Cephalotaxopsis brevifolia** Font. Potomac Fl., p. 238, pl. cv, f. 3; cvi, f. 5; cvii, f. 5, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal and near Potomac Run, Virginia.

**Cephalotaxopsis magnifolia** Font. Potomac Fl., p. 336, pl. civ, f. 4, 5; cv, f. 1, 2, 4; cvi, f. 1, 3; cvii, f. 1, 2, 4; cviii, f. 1, 3, 4, 1889.

Horsetown beds: Tehama County, California.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

**Cephalotaxopsis microphylla** Font. Potomac Fl., p. 238, pl. cviii, f. 5; cix, f. 9, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

**Cephalotaxopsis ramosa** Font. Potomac Fl., p. 237, pl. civ, f. 2, 3; cvi, f. 2, 4; cvii, f. 3; cviii, f. 2, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

**Cephalotaxopsis** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 89, 1892 [1893].

Kootanie: Anthracite, British Columbia.

**Cephalotaxopsis** sp., Font. In Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

**CERCIS** Linnæus. Sp. Pl., ed. i, p. 374, 1753.

**Cercis borealis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Fort Union group: Valley of the Yellowstone River.

**Cercis eocenica** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Erie, Colorado.

**Cercis parvifolia** Lx. Cret. and Tert. Fl., p. 201, pl. xxxi, f. 5-7, 1883.  
Green River group: Florissant, Colorado.

**Cercis truncata** Lx. Cret. and Tert. Fl., p. 237, 1883.

Fort Union group: Bad Lands, Dakota.

**CERCOCARPUS** Humbolt Bonpland and Kunth Nov. Gen. et Sp., vol. vi, p. 232, 1823.

**Cercocarpus antiquus** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 37, pl. x, f. 6-11, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 2, 1883.

Miocene: Table Mountain, California.

**CHAMÆCYPARIS** Spach. Hist. Vég., Phan., vol. xi, p. 329, 1842.



**Chamæcyparis thyoides** (L.) B. S. P.

*Cupressus thyoides* L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 73, 1896.

Pleistocene: New Jersey.

**CHARA** (Valliant) Linnæus. Gen. Pl., p. 326, 1737.

**Chara compressa** Kn. Bot. Gaz., vol. xiii, no. 6, p. 156, f. (in text) 1, 2, 1888.

Eocene: Wales, Utah.

**Chara ? glomerata** Lx. Cret. and Tert. Fl., p. 135, pl. xxi, f. 12, 1883.  
Green River group: Florissant, Colorado.

**Chara Stantonii** Kn. Bot. Gaz., vol. xviii, no. 4, p. 141, f. (in text) 1-3 1893.

Bear River formation: Cookeville, Utah.

**Chara** sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**CHIROPTERIS** Kurr in Bronn: Neues Jahrb. f. Min. 1858, p. 143, 1858.

**Chiropteris spatulata** Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 1, 2, 1891.

Kootanie: Great Falls, Montana.

**Chiropteris Williamsii** Newby. Am. Journ. Sci., vol. xli, p. 198, pl. xiv, f. 10, 11, 1891.

Kootanie: Great Falls, Montana.

**CHONDRITES** Sternberg. Vers., vol. ii, p. 25, 1833.

**Chondrites bulbosus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 42, pl. i, f. 14, 1878.

Laramie group: Raton Mountains, New Mexico.

**Chondrites flexuosus** Newby. Fl. Amboy Clays, p. 34, pl. i, f. 1, 4, 1895 [1896].

Amboy clay: New Jersey.

**Chondrites Heerii** Eichwald. Geognost.-Palæontolog. Bemerk. ii. Halbinsell. Mangischlak und Aleut.-Inseln., p. 111, pl. iv, f. 1, 1871.

*Chondrites* sp., Heer. Fl. Foss. Alask., p. 21, pl. x, f. 5, 1869.

Eocene?: Kachemak Bay, Alaska.

**Chondrites subsimplex** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 41, pl. i, f. 13, 1878.

Laramie group: Raton Mountains, New Mexico.

*Chondrites* sp., Heer=*Chondrites Heerii*.

**CHONDROPHYLLUM** Necker. Elem. Bot., iii, p. 347, 1790.

*Chondrophyllum Nordenskiöldi* Heer=*Hedera ovalis*?

**Condrophyllum obovatum** Newby. Fl. Amboy Clays, p. 118, pl. xlii, f. 26, 27, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Chondrophyllum orbiculatum** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 115, pl. xxxi, f. 3c; xxxii, f. 13, 1874; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. ii, f. 2b, 1892.

Cretaceous: Staten Island.

*Chondrophyllum orbiculatum* Heer. Referred by Lesquereux to *Hedera orbiculata* (Heer) Lx.

**Chondrophyllum reticulatum** Hollick. In Newby, Fl. Amboy Clays, p. 119, pl. xli, f. 6, 7, 1895 [1896].

Amboy clay: New Jersey.

**CINCHONIDIUM**, Unger. Gen. et Sp. Plant. Foss., p. 430, 1850.

**Cinchonidium ovale** Lx. Cret. and Tert. Fl., p. 229, pl. xlviii, f. 8-10b, 1883.

Fort Union group: Bad Lands, Dakota.

**CINNAMOMUM** Blume. Bijdr., 568.

**Cinnamomum affine** Lx. Am. Journ. Sci., vol. xlv, p. 206, 1869; Tert. Fl., p. 219, pl. xxxvii, f. 1-5, 7, 1878.

*Cinnamomum mississippiense* Lx. Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xix, f. 2, 1869.

*Cinnamomum polymorphum* Al. Br. Lx. Tert. Fl., p. 221, pl. xxxvii, f. 6 [non f. 10], 1878.

*Cinnamomum Rossmässleri* Heer in Lx. Ann. Rept. op. cit., p. 379, 1872 [1873]; Tert. Fl., p. 221, 1878.

Montana group: Coalville, Utah.

Denver beds: Golden?, South Park, Colorado.

Laramie group: Durango, Marshalls, Colorado; ? Raton Mountains, New Mexico; Black Buttes, Wyoming; ? Carbon, Wyoming; Corral Hollow, California.

*Cinnamomum affine* Lx. Ward, Bull. U. S. Geol. Surv., no. 37, p. 50, pl. xxiv, f. 3-5, 1887. [Non Lx.] = *Ficus* sp.

Laramie group: Black Buttes, Wyoming.

**Cinnamomum canadense** Dn. Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 13, pl. iv, f. 7, 1885 [1886].

Mill Creek series: Mill Creek?

**Cinnamomum crassipes** Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Bellingham Bay.

**Cinnamomum ellipsoideum** Sap. and Mar. Mém. l'Acad. Roy. d. Belgique, vol. xli, p. 61, pl. ix, f. 7-9, 1878; Lx., Fl. Dak. Gr., p. 105, pl. li, f. 8, 9, 1892.

Dakota group: Kansas.

**Cinnamomum ellipticum** Kn. Bull. U. S. Geol. Surv., no. 105, p. 54, 1893.

*Cinnamomum polymorphum* Al. Br. Lx. Tert. Fl., p. 221, pl. xxxvii, f. 10 [non f. 6, which = *C. affine*, q. v.], 1878.

Livingston beds: Bozeman coal field, Montana.

**Cinnamomum Heerii** Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859; Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 12, 1869; Cret. Fl., p. 84, pl. xxviii, f. 11, 1874; Cret. and Tert. Fl., p. 54; Fl. Dak. Gr., p. 105, pl. xv, f. 1, 1892.

Daphnogene Heerii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 343, 1874 [1876].

Dakota group: Kansas.

———?: Nanaimo.

Amboy clay?: South Amboy, New Jersey.?

**Cinnamomum intermedium** Newby. Fl. Amboy Clays, p. 89, pl. xxix, f. 1-3, 10, 1895 [1896].

Amboy clay: Woodbridge, Sayreville, New Jersey.

**Cinnamomum lanceolatum**? (Ung.) Heer. Fl. Tert. Helv., vol. ii, p. 86, pl. xciii, f. 6-11, 1856; Lx., Tert. Fl., p. 219, pl. xxxvi, f. 12, 1878. [Non Ward, Bull. U. S. Geol. Surv., no. 37, p. 49, pl. xxiv, f. 2, 1887.]

Daphnogene lanceolata Ung. Gen. et Sp., p. 424, 1850.

Laramie group: Evanston, Wyoming?

———: Upper Kanab Valley, Utah.

**Cinnamomum lanceolatum** (Ung.) Heer. Ward = **Cinnamomum Wardii**.

**Cinnamomum Marionii** Lx. Fl. Dak. Gr., p. 106, pl. li, f. 6, 7, 1892.

Dakota group: Kansas.

**Cinnamomum mississippiense** Lx. = **Cinnamomum affine**.

**Cinnamomum novæ-angliæ** Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 148, 1861.

———? Brandon, Vermont.

**Cinnamomum polymorphum** = **Cinnamomum affine**.

**Cinnamomum polymorphum** = **Cinnamomum ellipticum**.

**Cinnamomum Rossmässleri** = **Cinnamomum affine**.

**Cinnamomum Scheuchzeri** Heer. Fl. Tert. Helv., vol. ii, p. 85, pl. xci, f. 4-22; pl. xcii; pl. xciii, f. 1, 5, 1856; Lx., Cret. Fl., p. 83, pl. xxx, f. 2, 3, 1874; Tert. Fl., p. 220, pl. xxxviii, f. 8, 1878; Fl. Dak. Gr., p. 104, pl. xi, f. 4, 1892.

Daphnogene cretacea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 343, 1874 [1876].

Laramie group: Bozeman coal field, Montana.

Dakota group: Kansas; New Ulm, Minnesota.

Eocene?: Lassen County, California.

**Cinnamomum sezannense** Watlet. Pl. Foss. d. Bassin d. Paris, p. 175, pl. 50, f. 2, 1866; Lx., Fl. Dak. Gr., p. 107, pl. xii, f. 6, 7, 1892.

Dakota group: Kansas.

Cretaceous: Glen Cove and Sea Cliff, Long Island; Port McNeill, Vancouver Island.

**Cinnamomum Wardii** nom. nov.

**Cinnamomum lanceolatum** (Ung.) Heer. Ward, Bull. U. S. Geol. Surv., no. 37, p. 49, pl. xxiv, f. 2, 1887. [Non Lx.]

Laramie group: Hodges Pass, Wyoming.

*Cinnamomum?* sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 84, f. (in text) 15, 1890.

Eocene: North Fork Similkameen River, British Columbia.

*Cinnamomum* sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

*Cinnamomum* sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

**CISSITES** Heer. Phyll. Crét. d. Nebraska, p. 19, Zürich, 1866.

*Cissites acerifolius* Lx. Fl. Dak. Gr., p. 163, pl. lviii, f. 1, 1892.

Dakota group: Kansas.

*Cissites acuminatus* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, pl. viii, f. 1, 1874 [1876].

Dakota group: Fort Harker, Kansas.

*Cissites acutiloba* Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 227, pl. 237, f. 3, 1895.

Dakota group: Fort Harker, Kansas.

*Cissites affinis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 352, 1874 [1876]; Cret. and Tert. Fl., p. 67, 1883.

*Platanus affinis* Lx. Cret. Fl., p. 71, pl. iv, f. 4, 1874.

*Populites affinis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

Dakota group: Salina Valley, Kansas.

Mill Creek series: Mill Creek; North Fork Old Man River.

*Cissites affinis ampla* (Dn.) n. comb.

*Platanus affinis ampla* Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 12, 1885 [1886].

Mill Creek series: Mill Creek.

*Cissites alatus* Lx. Fl. Dak. Gr., p. 160, pl. xxiii, f. 6, 1892.

Dakota group: Kansas.

*Cissites Brownii* Lx. Fl. Dak. Gr., p. 162, pl. xviii, f. 11, 1892.

Dakota group: Kansas and Minnesota.

*Cissites crispus* Vel.? Fl. Böhm. Kreidefl., pt. iv, p. 12 [73], pl. iv [xxvii], f. 6, 1885; Newby., Fl. Amboy Clays, p. 108, pl. xlii, f. 20-23, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

*Cissites cyclophylla* Lx.=*Populites cyclophyllus*.

*Cissites dentato-lobatus* Lx. Fl. Dak. Gr., p. 164, pl. lxvi, f. 4, 1892.

Dakota group: Kansas.

*Cissites formosus* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 85, pl. xxi, f. 5-8, 1882; Lx., Fl. Dak. Gr., p. 161, pl. xxi, f. 5, 1892; Newby., Fl. Amboy Clays, p. 107, pl. xlvii, f. 1-8, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Dorosis Island, Glen Cove, Long Island.

**Cissites harkerianus** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 352, pl. vii, f. 1, 2, 1874 [1876].

*Sassafras* (Araliopsis) *harkerianum* Lx. Cret. Fl., p. 81, pl. xi, f. 3, 4; pl. xxvii, f. 2, 1874.

*Sassafras harkeriana* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873].

Dakota group: Kansas.

**Cissites Heerii** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 396, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, pl. vi, f. 3, 1874 [1876].

Dakota group: Fort Harker, Kansas.

**Cissites ingens** Lx. Fl. Dak. Gr., p. 159, pl. xix, f. 2, 2a, 1892.

Dakota group: Kansas.

**Cissites ingens parvifolia** Lx. Fl. Dak. Gr., p. 160, pl. lvii, f. 3, 4, 1892.

Dakota group: Kansas.

**Cissites insignis** Heer. Phyll. Crét. d. Nebr., p. 19, pl. ii, f. 3, 4, 1866.

Dakota group: Tekamah, Nebraska.

**Cissites microphyllus** Lx. Proc. U. S. Nat. Mus., vol. x, p. 44, pl. iii, f. 11, 1887.

Pleistocene?: Clear Lake, California.

**Cissites obtusilobus** Lx. Fl. Dak. Gr., p. 161, pl. xxxiii, f. 5, 1892.

Dakota group: Kansas.

*Cissites obtusum* Lx. = *Cissites salisburiaefolius*.

**Cissites platanoidea** Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 226, pl. 237, f. 2, 1895.

Dakota group: Fort Harker, Kansas.

**Cissites populoides** Lx. Fl. Dak. Gr., p. 162, pl. xviii, f. 12-14, 1892.

Dakota group: Kansas.

**Cissites salisburiaefolius** Lx. Cret. and Tert. Fl., p. 66, 1883.

*Populites salisburiaefolius* Lx. Am. Journ. Sci., vol. xlvi, p. 94, 1868.

*Sassafras obtusum* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

*Cissites obtusum* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 354, 1874 [1876].

Dakota group: Kansas and Nebraska.

**CISSUS** Linnaeus. Diss. Dass., p. 6, 1747.

**Cissus Browniana** Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 17, pl. A, f. 8, 1893.

Dakota group: New Ulm, Minnesota.

**Cissus corylifolia** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 52, 1888.

Denver group: Golden, Colorado.

**Cissus duplicato-serrata** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 52, 1888.

Denver group: Golden, Colorado.

**Cissus lævigata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 238, pl. xl, f. 12, 13, 1878.

Denver beds: Golden, Colorado.

Arapahoe beds?: Sedalia, Colorado.

**Cissus lobato-crenata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873]; Tert. Fl., p. 240, pl. xli, f. 1-3, 1878.

Denver group: Golden, Mount Cross, Colorado.

Laramie group: Black Buttes, Wyoming.

**Cissus parrottiaefolia** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 314, 1874 [1876]; Tert. Fl., p. 239, pl. xl, f. 15-17; pl. xlii, f. 1, 1878.

Denver beds: Golden, Colorado.

Green River group?: Medicine Bow, Wyoming.

**Cissus tricuspidata** (Heer) Lx. Tert. Fl., p. 240, pl. xli, f. 4-7, 1878.

Vitis (Cissus) tricuspidata Heer. Mioc. Balt. Fl., p. 91, pl. xxviii, f. 18, 19, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873].

Laramie group: Black Buttes, Wyoming.

**CLADOPHLEBIS** Brongniart. Tab. des genres de vég. foss., p. 25, 1849.

**Cladophlebis acuta** Font. Potomac Fl., p. 74, pl. v, f. 7: pl. vii, f. 6; pl. x, f. 6, 7; pl. xi, f. 7, 8; pl. clxvi, f. 5, 1889.

Potomac formation: Potomac Run, and Dutch Gap Canal, Virginia.

**Cladophlebis alata** Font. Potomac Fl., p. 77, pl. xix, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis angustifolia** Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 8, 1891.

Kootanie: Great Falls, Montana.

**Cladophlebis brevipennis** Font. Potomac Fl., p. 81, pl. xxxvi, f. 1.

Potomac formation: Fishing hut above Dutch Gap Canal, Virginia.

**Cladophlebis Browniana** (Dunk.) Seward. Cat. Mesoz. Pl. Brit.

Mus. Wealden Fl., pt. i, p. 99, 1894.

Pecopteris Browniana Dunk. Wealdenbildung, p. 5, 1846; Font., Potomac Fl., p. 88, pl. xxii, f. 10, 11; xxiii, f. 2-7; xxvi, f. 3, 13, 1889; Proc. U. S. Nat. Mus., vol. xv, p. 492, 1892; Dn., Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 84, f. (in text) 3, 1892 [1893].

Potomac formation: Fredericksburg, Dutch Gap Canal, and near Brooke, Virginia; Baltimore, Maryland.

Kootanie: Great Falls, Montana; Anthracite, British Columbia.

**Cladophlebis columbiana** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 55, pl. v, f. 4, 5, 1893 [1894].

Cretaceous: Vancouver Island.

**Cladophlebis constricta** Font. Potomac Fl., p. 68, pl. ii, f. 11; pl. iii, f. 2; pl. vi, f. 5, 6, 8-14; pl. xxi, f. 9, 13; pl. clxix, f. 2, 1889.

Kootanie: Great Falls, Montana.

Potomac formation: Fredericksburg, Brooke Station, and Deep Bottom, Virginia; Baltimore, Maryland.

**Cladophlebis crenata** Font. Potomac Fl., p. 75, pl. ix, f. 7-9; pl. x, f. 1, 2; pl. xiii, f. 1-3; pl. xix, f. 1; pl. xx, f. 6, 1889.

Potomac formation: Fredericksburg, Brooke Station, and Potomac Run, Virginia.

**Cladophlebis denticulata** Font. Potomac Fl., p. 71, pl. iv, f. 2; pl. vii, f. 7, 1889.

Potomac formation: Fredericksburg and Potomac Run, Virginia.

**Cladophlebis distans** Font. Potomac Fl., p. 77, pl. xiii, f. 4, 5, 1889.

Potomac Fl.: Near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

**Cladophlebis Dunkeri** (Schimp.) Seward. Cat. Mesoz. Pl. Brit. Mus. Wealden Fl., pt. 1, p. 100, 1894.

Pecopteris Dunkeri Schimp. Pal. Vég., vol. i, p. 539, 1869.

Aspidium Dunkeri (Schimp.) Font. Potomac Fl., p. 101, pl. xxii, f. 9; xxv, f. 11, 12; xxvi, f. 2, 8, 9, 18; liv, f. 3, 9, 1889.

Potomac formation: Telegraph Station, Dutch Gap Canal, and Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

**Cladophlebis falcata** Font. Potomac Fl., p. 72, pl. iv, f. 8; pl. v, f. 1-6; vi, f. 7; pl. vii, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

Kootanie: Anthracite, British Columbia.

**Cladophlebis heterophylla** Font. Proc. U. S. Nat. Mus., vol. xv, p. 493, pl. lxxxiv, f. 2, 1892.

Kootanie: Great Falls, Montana.

**Cladophlebis inaequiloba** Font. Potomac Fl., p. 80, pl. xxv, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis inclinata** Font. Potomac Fl., p. 76, pl. x, f. 3, 4; pl. xx, f. 8, 1889.

Potomac formation: Telegraph station, Virginia.

Knoxville beds: Tehama County, California.

**Cladophlebis latifolia** Font. Potomac Fl., p. 69, pl. iii, f. 1; pl. vi, f. 4, 1889.

Potomac formation: Baltimore, Maryland.

**Cladophlebis oblongifolia** Font. Potomac Fl., p. 74, pl. vii, f. 3-5, 1889.

Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.

**Cladophlebis pachyphylla** Font. Potomac Fl., p. 80, pl. xxv, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis parva** Font. Potomac Fl., p. 73, pl. iv, f. 7; pl. vi, f. 1-3, 1889.

Potomac formation: Fredericksburg, Virginia.

Kootanie: Great Falls, Montana.

**Cladophlebis petiolata** Font. Potomac Fl., p. 80, pl. xxii, f. 8, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Cladophlebis rotundata** Font. Potomac Fl., p. 78, pl. xx, f. 9, 10, 1889.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis sphenopteroides** Font. Potomac Fl., p. 79, pl. xxi, f. 4, 1889.

Fishing hut above Dutch Gap Canal, Virginia.

**Cladophlebis virginensis** Font. Potomac Fl., p. 70, pl. iii, f. 3-8; pl. iv, f. 1, 3-6, 1889.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis** sp.? Font. Potomac Fl., p. 76, pl. x, f. 5, 8; pl. xx, f. 7, 1889.

Potomac formation: Fredericksburg and Potomac Run, Virginia.

**Cladophlebis** sp., Font. Potomac Fl., p. 77, pl. xv, f. 6; pl. xix, f. 3, 1889.

Potomac formation: Potomac Run, and near Brooke Station, Virginia.

**Cladophlebis** sp., Font. Potomac Fl., p. 78, pl. xix, f. 2, 1889.

Potomac formation: Telegraph station, Virginia.

**Cladophlebis** sp., Font. Potomac Fl., p. 81, pl. xxvi, f. 15.

Potomac formation: Fredericksburg, Virginia.

**Cladophlebis** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv., p. 85, 1892.

Kootanie: Anthracite, British Columbia.

*Clathropodium mirabile* (Lx.) Ward = *Cycadeoidea mirabilis*.

**CLETHRA** Gronovius ex Linnæus. Syst., ed. i, 1735.

**Clethra alnifolia** L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

**COCOLOBA** Linnæus. Syst., ed. x, p. 1007, 1759.

**Cocoloba lævigata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 208, pl. xxxv, f. 7, 1878.

Laramie group?: Carbon, Wyoming.

*Cocculus* De Candolle. Syst., Veg. V, i, p. 515 = *Cebatha*.

*Cocculus* Haydenianus Ward = *Cebatha* Haydeniana.

**COLUTEA** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Colutea Boweniana** Lx. Cret. and Tert. Fl., p. 255, pl. lvii, f. 4, 1883.

Miocene?: Bowen claim, California.

**Colutea primordialis** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 99, pl. xxvii, f. 7-11; lxiii, f. 78, 1882; Lx., Fl. Dak. Gr., p. 148, pl. xiii, f. 8, 9, 1892; Newby., Fl. Amboy Clays, p. 97, pl. xix, f. 4, 5, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Eatons Neck, Long Island.



**COMPTONIA** Banks. Gärtn. Fr. and Sem., vol. ii, p. 58, pl. xc, 1791.  
**Comptonia columbiana** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 81, f. (in text) 10, 1890.

Miocene?: North Similkamen and Kamloops, British Columbia.

**Comptonia cuspidata** Lx. = *Myrica cuspidata*.

**Comptonia premissa** Lx. = *Myrica premissa*.

**CONE** of *Pinus*? sp., Font. Potomac Fl., p. 272, pl. clxx, f. 4, 1889.

Potomac formation: Baltimore, Maryland.

**CONOSPERMITES** Etttingshausen. Sitzb. Wien. Akad., vol. lv, abt. i, p. 254, 1867.

**Conospermities ellipticus** Font. Potomac Fl., p. 279, pl. cxxxviii, f. 14, 1889.

Potomac formation: Near Potomac Run, Virginia.

*Cordia*? *tiliæfolia* Al. Br. = *Ficus tiliæfolia*.

**CORNOPHYLLUM** Newberry. Fl. Amboy Clays, p. 119, 1895 [1896].

**Cornophyllum vetustum** Newby. Fl. Amboy Clays, p. 119, pl. xix, f. 10, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**CORNUS** (Tournefort) Linnaeus. Syst., ed. i, 1735.

*Cornus acuminata* Newby. = *Cornus Newberryi*.

*Cornus Emmonsii* Ward = *Cornus impressa*.

**Cornus ferox** Ung. Gen. et Sp. Pl. Foss., p. 441, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 21, 1888.

Eocene?: Cherry Creek, Oregon.

? **Cornus Fosteri** Ward. Bull. U. S. Geol. Surv., no. 37, p. 54, pl. xxv, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Cornus Holmesii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1873 [1874]. [Not afterwards recognized.]

Laramie group?: Coal Creek, Colorado.

**Cornus hyperborea** Herr. Fl. Foss. Arct., vol. ii, abt. iv, p. 476, pl. l, f. 3, 4, 1869; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 29, pl. xv, f. 3, 1888.

Eocene?: Lassen County, California.

Denver beds: Mount Bross, Middle Park; North Denver, Colorado.

Laramie group? (upper beds): Point of Rocks, Wyoming.

**Cornus impressa** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 408, 1873 [1874]; Tert. Fl., p. 243, pl. xlii, f. 3, 1878.

*Cornus Emmonsii* Ward. Bull. U. S. Geol. Surv., no. 37, p. 55, pl. xxvi, f. 2, 3, 1887.

**Cornus incompletus** Lx. Am. Jour. Sci., vol. xlv, p. 206, 1868. [Not afterwards referred to by its author.]

Laramie group: Marshalls, Colorado.

**Cornus Kelloggii** Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 23, pl. vi, f. 3, 1878.

Miocene: Chalk Bluffs, California.

**Cornus Newberryi** Hollick. nom. nov. MSS.

*Cornus acuminata* \* Newby. Later Extinct Floras, p. 71, 1868; Ill., pl. xx, f. 2-4, 1878.

[\* *Cornus acuminata* Newby. 1868. Preoccupied by *C. acuminata* O. Weber, Paleontogr., ii, p. 192. 1852.]

**Cornus obesus** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. ix, f. 30, 1893 [1894].

Upper Cretaceous: Vancouver Colliery, Vancouver Island.

*Cornus orbifera* Heer = *Cornus suborbifera*.

**Cornus ovalis** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 23, pl. vi, f. 1, 2, 1878.

Miocene: Table Mountain, California.

**Cornus platyphylloides** Lx. Fl. Dak. Gr., p. 126, pl. lxiv, f. 15, 1892.

Dakota group: Kansas.

**Cornus præcox** Lx. Fl. Dak. Gr., p. 125, pl. xxiii, f. 5, 1892.

Dakota group: Kansas.

**Cornus rhamnifolia** O. Web. Paleontogr., vol. ii, p. 192, pl. iv, f. 8, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 9, 1871 [1872]; Tert. Fl., p. 244, pl. lxii, f. 6, 1878.

Laramie group: Bozeman coal field, Montana.

Montana formation: Point of Rocks, Wyoming.

**Cornus Stüderi** ? Heer. Fl. Tert. Helv., vol. iii, p. 27, pl. cv, f. 18-21, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 244, pl. xlii, f. 4, 5, 1878.

Denver beds: Golden, Colorado.

Montana formation: Point of Rocks, Wyoming.

**Cornus suborbifera** Lx. Tert. Fl., p. 243, pl. xlii, f. 2, 1878.

*Cornus orbifera* Heer, Lx. Ann. Rept., op. cit., p. 402, 1873 [1874].

Eocene?: Cook Inlet, Alaska.

Laramie group: Golden, Colorado.

**Cornus** sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 70, 1896.

Pleistocene: Greenville, New Jersey.

**CORYLUS** (Tournefort) Linnaeus. Syst., ed. i, 1735.**Corylus americana** Walt. Flora Caroliniana, p. 236, 1788; Newby., Later Extinct Floras, p. 59, 1868.

Fort Union group: Seven-Mile Creek, Montana; Fort Union, Dakota.

Canadian Upper Laramie: Porcupine Creek.

**Corylus Fosteri** Ward. Bull. U. S. Geol. Surv., no. 37, p. 29, pl. xiii, f. 5, 6, 1887.

Fort Union group: Clear Creek, Montana.

**Corylus grandifolia** Newby. Later Extinct Floras, p. 59, 1868.

Fort Union group: Fort Union, Dakota.

**Corylus MacQuarrii** (Forbes) Heer. *Urwelt d. Schweiz*, p. 321, 1865.  
Alnites? *M'Quarrii* Forbes. *Quat. Journ. Geol. Soc.*, vol. vii, p. 103, pl. iv, f. 3, 1851.

Eocene?: Alaska, Mackenzie River.

Fort Union: Montana; Porcupine Creek, British Columbia.

Laramie group?: Carbon, Wyoming.

**Corylus MacQuarrii macrophylla** Heer. *Fl. Foss. Arct.*, vol. i, p. 105, 1868; vol. ii, abt. ii (*Fl. Foss. Alask.*), p. 30, pl. iv, f. 6, 7, 1869.  
Eocene?: Alaska.

**Corylus orbiculata** Newby. *Later Extinct Floras*, p. 58, 1868.

Fort Union group: Fort Union, Dakota.

**Corylus rostrata** Ait. *Hort. Kew.*, vol. iii, p. 364, 1789; Newby., *Later Extinct Floras*, p. 60, 1868.

Fort Union group: Seven-Mile Creek, Montana; Fort Union, Dakota.

Canadian Upper Laramie: Porcupine Creek.

**CRATÆGUS** (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

**Cratægus acerifolia** Lx. *Cret. and Tert. Fl.*, p. 198, pl. xxxvi, f. 10, 1883.

Green River group: Florissant, Colorado.

**Cratægus aceroides** Lx. *Fl. Dak. Gr.*, p. 143, pl. liv, f. 8; pl. lv, f. 1, 1892.

Dakota group: Kansas.

**Cratægus ? æquidentata** Lx. *Tert. Fl.*, p. 297, pl. lviii, f. 4, 4a, 1878.

Laramie group?: Carbon, Wyoming.

**Cratægus antiqua** Heer. *Fl. Foss. Arct.*, vol. i, p. 125, pl. i, f. 1, 2, 1868; Lx., *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 57, 1888.

Denver group: Golden, Colorado.

**Cratægus atavina** Heer. *Fl. Foss. Arct.*, vol. vii, p. 43, pl. lxiv, f. 11, 1883; Lx., *Geol. and Nat. Hist. Surv. Minn.*, vol. iii, p. 20, pl. B, f. 8, 1893.

Dakota group: New Ulm, Minn.

**Cratægus betulæfolia** Lx. *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

**Cratægus Engelhardti** Lx. *Bull. Mus. Comp. Zoöl.*, vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

**Cratægus flavescens** Newby. *Proc. U. S. Nat. Mus.*, vol. v, p. 507, 1882 [1883].

*Myrica diversifolia* Lx. *Cret. and Tert. Fl.*, p. 148, pl. xxv, f. 6-15, 1883.

Miocene?: Bridge Creek, John Day Valley, Oregon.

Green River group: Florissant, Colorado.

**Cratægus Holmesii** Lx. *Proc. U. S. Nat. Mus.*, vol. x, p. 43, pl. iii, f. 7-9, 1887.

Denver group: Silver Cliff, Colorado.

- Cratægus Lacoei** Lx. Fl. Dak. Gr., p. 143, pl. lxiv, f. 14, 1892.  
Dakota group: Kansas.
- Cratægus lawrenciana** Lx. Fl. Dak. Gr., p. 142, pl. xxxviii, f. 1, 1892.  
Dakota group: Kansas.
- Cratægus Marcouiana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 36, pl. xiv, f. 2; pl. xv, f. 1, 2, 1888.  
Unknown: "Fossil Point, P. Y. Sheet."
- Cratægus Marcouiana subintegrifolia** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 36, pl. xiv, f. 2, 1888.  
Unknown: "Fossil Point, P. Y. Sheet."
- Cratægus myricoides** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 56, 1888.  
Denver group: Golden, Colorado.
- Cratægus tenuinervis** Lx. Fl. Dak. Gr., p. 142, pl. liv, f. 5-7, 1892.  
Dakota group: Kansas.
- CREDNERIA** Zenker. Beiträge z. Naturgeschichte der Urwelt, p. 15, 1833.
- ? **Credneria daturæfolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 97, pls. xlii, f. 4; xliii, xlv, 1887.  
Fort Union group: Seven-Mile Creek, Montana.
- Credneria Leconteana** Lx. = *Protophyllum Leconteanum*.
- Credneria ? microphylla** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876].  
Dakota group: Kansas.
- CTENIS**, Lindley and Hutton. Foss Fl. Great Britain, vol. ii, p. 63, 1834.
- Ctenis imbricata** Font. Potomac Fl., p. 177, pl. cxxxviii, f. 10-12, 1889.  
Potomac formation: Fredericksburg, Virginia.
- CTENOPHYLLUM** Schimper. Pal. Vég., vol. ii, p. 143, 1870.
- Ctenophyllum latifolium** Font. Potomac Fl., p. 175, pl. lxviii, f. 2, 3, 1889.  
Potomac formation: Fredericksburg, Virginia.
- CTENOPTERIS** Brongniart, in litt. Saporta. Plantes Jurassiques, vol. i, p. 351, 1873.
- Ctenopteris angustifolia** Font. Potomac Fl., p. 159, pl. lxv, f. 2; lxvii, f. 4, 1889.  
Potomac formation: Near Potomac Run, Virginia.
- Ctenopteris insignis** Font. Potomac Fl., p. 156, pl. lxi, f. 4, 5; lxii, f. 1; lxiii, f. 1, 2, 1889.  
Potomac formation: Fredericksburg, and near Potomac Run, Virginia.
- Ctenopteris integrifolia** Font. Potomac Fl., p. 158, pl. lxii, f. 2; lxv, f. 3, 1889.  
Potomac formation: Near Potomac Run, and Fredericksburg, Virginia.

- Ctenopteris longifolia** Font. Potomac Fl., p. 159, pl. lxvii, f. 5, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Ctenopteris minor** Font. Potomac Fl., p. 157, pl. lxvii, f. 3, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Ctenopteris virginianensis** Font. Potomac Fl., p. 157, pl. lxii, f. 4; lxv, f. 1; lxvi, f. 4, 1889.  
Potomac formation: Fredericksburg, Virginia.
- CUNNINGHAMITES** Presl. In Sternb., Vers., vol. ii, p. 203, 1833.
- Cunninghamites elegans** (Corda) Endl. Synop. Conif., p. 305, 1847;  
Newby., Fl. Amboy Clays, p. 48, pl. v, f. 1-7, 1895 [1896].  
Amboy clay: Keyport, New Jersey.  
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- Cunninghamites squamosus** Heer. Kreide Fl. v. Quedlinburg, p. 9,  
pl. i, f. 5-7, 1872; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 129,  
pl. xi, f. 3, 1897.  
Clay marl (Upper Cretaceous): Cliffwood, New Jersey.
- CUPRESSINOXYLON** Göppert. Monogr. d. foss. Conif., p. 196,  
1850.
- Cupressinoxylon arkansanum** Kn. Ann. Rept. Geol. Surv. of Ark.  
for 1889, vol. ii, p. 253, pl. ix, f. 1, 2, 1889.  
Tertiary [Orange Sand]: Near Wittsburg, Cross County, Arkansas.
- Cupressinoxylon Calli** Kn. Ann. Rept. Geol. Surv. of Ark. for 1889,  
vol. ii, p. 254, pl. ix, f. 3-7, 1889.  
Tertiary: 5½ miles northwest of Gainesville, Green County,  
Arkansas.
- Cupressinoxylon? Bibbinsi** Kn. Science, new ser., vol. iii, no. 68,  
p. 584, f. (in text) 1-4, 1896.  
Upper Potomac formation: Cape Sable, Maryland.
- Cupressinoxylon columbianum** Kn. Bull. U. S. Geol. Surv., no. 56,  
p. 49, pl. iv, f. 5; pl. v, f. 3, 4; pl. vi, f. 1-5; pl. vii, f. 1, 1888.  
Potomac formation: Dutch Gap Canal, James River, Virginia.
- Cupressinoxylon dubium** Cramer. In Heer's, Fl. Foss. Arct., vol. i, p.  
173, pl. xxxiv, f. 3; xxxviii, f. 1-6, 1868.  
——: Banks Land.
- Cupressinoxylon elongatum** Kn. Proc. U. S. Nat. Mus., vol. xi, p.  
7, pl. iii, f. 1-4, 1888.  
Fort Union group: Near Glendive, Montana.
- Cupressinoxylon eutreton** Felix. Zeitschr. d. Deutschen geol. Gesell.  
Jahr. 1896, p. 255, 1896.  
Eocene: Yanceys, Yellowstone National Park.
- Cupressinoxylon Glasgowi** Kn. Proc. U. S. Nat. Mus., vol. xi, p.  
6, pl. ii, f. 1-5, 1888.  
Cretaceous?: Emmet County, Iowa.
- Cupressinoxylon McGeei** Kn. Bull. U. S. Geol. Surv., no. 56, p. 46,  
pl. ii, f. 5; pl. iii, f. 1-5, 1888.  
Potomac formation: Washington, District of Columbia.

**Cupressinoxylon polyommatum** Cramer. In Heer's Fl. Foss. Arct., vol. i, p. 172, pl. xxxiv, f. 2*a*, *b*; xxxv, f. 2, 3; xxxvii, 1868.

——: Banks Land.

**Cupressinoxylon pulchellum** Kn. Bull. U. S. Geol. Surv., no. 56, p. 45, pl. ii, f. 1-4, 1889.

Potomac formation: Spring Hill, Appomattox River, Virginia.

**Cupressinoxylon pulchrum** Cramer. In Heer's Fl. Foss. Arct., vol. i, p. 171, pl. xxxiv, f. 1; xxxvi, f. 6-8, 1868.

——: Banks Land.

**Cupressinoxylon taxodioides** Conwentz. Schriften d. Naturf. Gesell. Danzig, vol. iv, p. 124, 1878; Neues Jahrb. f. 1878, p. 812, pl. xiii, xiv, 1878.

Tertiary: Calistoga, California.

**Cupressinoxylon Wardi** Kn. Bull. U. S. Geol. Surv., no. 56, p. 48, pl. iv, f. 1-4; pl. v, f. 1, 2, 1888.

Potomac formation: Near Montello, District of Columbia; Neabsco Creek, Virginia.

**Cupressinoxylon** sp., Kn. In Turner, Bull. Geol. Soc. Am., vol. ii, p. 394, 1891.

Knoxville beds: Eagle Point, California.

**Cupressoxylo** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 67, 1873.

Lower Cretaceous: British Columbia.

**Cupressoxylo** sp. (a), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 3, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressoxylo** sp. (b), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressoxylo** sp. (c), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 4, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressoxylo** sp. (d), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressoxylo** sp. (e), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, pl. xv, f. 5, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressoxylo** sp. (f), Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Cupressites Cookii** Newby. Later Extinct Floras, p. 9, 1868; Fl. Amboy Clays, p. 61, 1895 [1896]. Nomen nudum.

Amboy clay: New Jersey.

**Cupressus thyoides** L. = *Chamaecyparis thyoides*.

**CYATHEITES** Göppert. Syst. Fil. Foss., p. 319, 1836.

**Cyatheites? nebraskana** (Heer) n. comb.

*Pecopteris nebraskana* Heer. Saporta, Fl. Foss. d. Sézanne, p. 332, f. (in text) 8, 1868; Lx., Cret. Fl., p. 46, pl. xxx, f. 12b, 1874.

Dakota group: Kansas.

**CYCADEOIDEA** Buckland. Proc. Geol. Soc. London, vol. i, p. 80, 1827.

**Cycadeoidea Bibbinsi** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 15, 1897.

Potomac formation: Maryland.

**Cycadeoidea dacotensis** (McBride) Ward. Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

*Bennettites dacotensis* McBride. Am. Geol., vol. xii, p. 249, pl. xi, f. 1, 2, 1893; Bull. Lab. Nat. Hist. State Univ. of Iowa, vol. ii, p. 391, pl. xii, f. 1, 2, 1893.

Lower Cretaceous: Minnekahta Station, South Dakota.

**Cycadeoidea Fontaineana** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 13, 1897.

Potomac formation: Maryland.

**Cycadeoidea Goucheriana** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 14, 1897.

Potomac formation: Maryland.

**Cycadeoidea Jenneyana** Ward. Proc. Biol. Soc. Wash., vol. ix, p. 87, 1894.

Lower Cretaceous: Near Rapid City, South Dakota.

**Cycadeoidea marylandica** (Font.) Cap. and Solms. Mem. Real. Accad. Sci. Ist. Bologna, ser. v, tom. ii, p. 179, 180, 186, 1892; Ward, Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

*Cycas* sp., Tyson. First Rept. State Agric. Chem. Md., p. 42, 1860.

*Bennettites* sp., Car. Trans. Linn. Soc. Lond., vol. xxvi, p. 708, 1870.

*Cycadeoidea* sp., Font. Am. Journ. Sci., vol. xvii, p. 157, 1879.

*Tysonia marylandica* Font. Potomac Fl., p. 193, pl. clxxiv-clxxx, 1889.

Potomac formation: Maryland.

**Cycadeoidea McGeeana** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 12, 1897.

Potomac formation: Maryland.

**Cycadeoidea mirabilis** (Lx.) Ward. Proc. Biol. Soc. Wash., vol. ix, p. 86, 1894.

*Zamiostrobus? mirabilis* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, 2d ser., no. 5, p. 383, 1875 [1876]; Tert. Fl. p. 70, pl. xliii, f. 1, 1878.

*Nelumbium* James. Science, vol. iii, p. 434, 1884.

*Clathropodium mirabile* (Lx.) Ward. Science, vol. iii, p. 532, 1884.

*Cycadeoidea Zamostrobus* Solms. Mem. Real. Accad. Sci. Ist. Bologna, ser. v, tom. ii, p. 210, 1892.

Unknown: Golden, Colorado.

**Cycadeoidea munita** Cragin. Bull. Washburn College Lab. Nat. Hist., Topeka, Kans., vol. ii, p. 65, 1889.

Lower Cretaceous: Belvidere, Kansas.

Bull. 152—6

**Cycadeoidea Tysoniana** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 11, 1897.

Potomac formation: Maryland.

**Cycadeoidea Uhleri** Ward. Proc. Biol. Soc. Wash., vol. xi, p. 14, 1897.

Potomac formation: Maryland.

*Cycadeoidea Zamiestrobis* Solms=*Cycadeoidea mirabilis*.

*Cycadeoidea* sp., Font.=*Cycadeoidea marylandica*.

**CYCADEOSPERMUM** Saporta. Pl. Jurass., vol. ii, p. 235, 1875.

**Cycadeospermum acutum** Font. Potomac Fl., p. 270, pl. cxxxv, f. 12, 1889.

Potomac formation: Potomac Run, Virginia.

**Cycadespermum angustum** Font. Potomac Fl., p. 271, pl. cxxxv, f. 20, 1889.

Potomac formation: Near Potomac Run, Virginia.

*Cycadeospermum* (*Dioonites*) *columbianus* Dn.=*Dioonites columbianus*.

**Cycadeospermum columnare** Lx. Fl. Dak. Gr., p. 31, pl. xliv, f. 7, 8, 1891.

Dakota group: Kansas.

**Cycadeospermum ellipticum** Font. Potomac Fl., p. 271, pl. cxxxv, f. 19, 1889.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

**Cycadeospermum lineatum** Lx. Fl. Dak. Gr., p. 30, pl. i, f. 14, 1891.

Dakota group: Kansas.

**Cycadeospermum obovatum** Font. Potomac Fl., p. 270, pl. cxxxv, f. 13, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Cycadeospermum rotundatum** Font. Potomac Fl., p. 271, pl. cxxxvi, f. 12, 1889.

Potomac formation: Kankeys, Virginia.

Trinity division, Glenrose, Texas.

**Cycadeospermum spatulatum** Font. Potomac Fl., p. 271, pl. cxxxv, f. 11, 21, 1889.

Potomac formation: Near Potomac Run, Virginia.

**CYCADINOCARPUS** Schimper. Pal. Vég., vol. ii, p. 208, 1870.

**Cycadinocarpus circularis** Newby. Fl. Amboy Clays, p. 46, pl. xlv, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**CYCADITES** Buckland. Geol. and Mineral., vol. i, p. 496, 1836.

**Cycadites pungens** Lx. Fl. Dak. Gr., p. 30, pl. ii, f. 6, 1892.

Dakota Group: Kansas.



**Cycadites unjiga** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 20, pl. i, f. 2, 2a, 1882 [1883].

——: Pine River Forks, Table Mountain, and Peace River, Northwest Territory.

*Cycas* sp., Tyson = *Cycadeoidea marylandica*.

**CYPERACITES** Schimper. Pal. Vég., vol. ii, p. 412, 1870.

[*Cyperites* Lindl. and Hutt. Foss. Fl. Gr. Brit., vol. i, p. 124, 1831-1833 = *Lepidodendron*. *Cyperites* Heer. Fl. Tert. Helv., vol. i, p. 75, 1855 = *Cyperacites*.]

**Cyperacites angustior** (Al. Br.) Schimp. Pal. Vég., vol. ii, p. 414, 1870.

*Cyperites angustior* Al. Br. In Stizenberger, Versteinung, p. 75, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——?: Elk Creek, Yellowstone National Park.

? **Cyperacites borealis** (Heer) n. comb.

*Cyperites borealis*? Heer. Fl. Foss. Arct., vol. i, p. 96, pl. xlv, f. 3, 1868; Lx., Proc. U. S. Nat. Mus., vol. x, p. 36, 1887.

Pliocene?: Applegarth Canyon.

**Cyperacites canaliculatus** (Heer) Schimp. Pal. Vég., vol. ii, p. 415, 1870.

*Cyperites canaliculatus* Heer. Fl. Tert. Helv., vol. i, p. 77, pl. xxviii, f. 5, 1855; Lx., Proc. U. S. Nat. Mus., vol. x, p. 36, 1887.

——?: Near Strahlenberg, Utah.

**Cyperacites paucinervis** (Heer) Schimp. Pal. Vég., vol. ii, p. 414, 1870.

*Cyperites paucinervis* Heer. Fl. Tert. Helv., vol. i, p. 79, pl. xxix, f. 4, 1855; Dn., Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 144, 1895 [1896].

Eocene: Stanley Park, British Columbia.

**Cyperacites Haydenii** (Lx.) n. comb.

*Cyperites Haydenii* Lx. Cret. and Tert. Fl., p. 140, pl. xxiii, f. 1-3a, 1883.

Green River Group: Uinta County, formerly but erroneously called Randolph County, Wyoming.

**Cyperacites?** sp. (Dn.) n. comb.

*Cyperites?* sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 90, f. (in text) 31, 1890.

Eocene?: Similkameen Valley, British Columbia.

**Cyperacites** sp. (Dn.) n. comb.

*Cyperites* sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, f. (in text) 16, 1892.

Kootanie: Anthracite? British Columbia.

**Cyperacites** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

*Cyperites borealis* Heer = *Cyperacites borealis*.

*Cyperites canaliculatus* Heer = *Cyperacites canaliculatus*.

*Cyperites angustior* Al. Br. = *Cyperacites angustior*.

**Cyperites Deucalionis** Heer. Fl. Tert. Helv., vol. i, p. 78, pl. xxix, f. 1; pl. xxvi, f. 13b; xxx, f. 3h, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Eocene?: Barrell Springs, Wyoming.

**Cyperites Haydenii** Lx. = **Cyperacites Haydenii**.

**Cyperites paucinervis** Heer = **Cyperacites paucinervis**.

**Cyperites** sp., Dn. = **Cyperacites** sp.

**CYPERUS** (Micheli) Linnæus. Syst., ed. i, 1735.

**Cyperus ! Braunianus ?** Heer. Fl. Tert. Helv., vol. i, p. 72, pl. xxii, f. 6; pl. xxvii, f. 4-7, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Eocene?: Barrell Springs, Wyoming?

**Cyperus Chavanensis** "Heer" = **Cyperus Chavannesi**.

**Cyperus Chavannesi** Heer. Fl. Tert. Helv., vol. i, p. 72, pl. xxii, f. 7; xxviii, f. 1, 1855.

**Cyperus Chavanensis** Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 291, 1871 [1872]; Tert. Fl., p. 92, pl. ix, f. 1, 2, 1878.

Green River group: Green River Station, Wyoming.

Laramie group?: Evanston, Wyoming.

**Cyperus** sp., Kn. Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

**Cyperus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**CYTISUS** Linnæus. Syst., ed. i, 1735.

**Cytisus florissantianus** Lx. Cret. and Tert. Fl., p. 200, pl. xxxix, f. 14, 1883.

Green River group: Florissant, Colorado.

**Cytisus modestus** Lx. Cret. and Tert. Fl., p. 200, pl. xxxix, f. 9-11, 1883.

Green River group: Florissant, Colorado.

**CZEKANOWSKIA** Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 70, 1876.

**Czekanowskia capillaris** Newby. Fl. Amboy Clays, p. 61, pl. ix, f. 14-16, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**DALBERGIA** Linnæus, f. Suppl., p. 52, 1781.

**Dalbergia apiculata** Newby. Fl. Amboy Clays, p. 90, pl. xlii, f. 17-19, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

**Dalbergia cuneifolia** Heer. Fl. Tert. Helv., vol. iii, p. 104, pl. cxxxiii, f. 20, 1859; Cret. and Tert. Fl., p. 200, pl. xxxiv, f. 6, 7, 1883.

Green River group: Florissant, Colorado.

**Dalbergia hyperborea** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 102, pl. xxvi, f. 4a, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xi, p. 7, pl. iv, f. 7, 1892.

Cretaceous: Tottenville, Staten Island.

**Dalbergia Rinkiana** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 102, pl. xxvi, f. 1-3, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 236, pl. vi, f. 4, 5, 1893.

Cretaceous: Brooklyn, New York; Lloyds Neck, Long Island.

**DAMMARA** Gartner. Fruct., vol. ii, p. 100, 1791.

**Dammara borealis** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 54, pl. xxxvii, f. 5, 1882; Newby., Fl. Amboy Clays, p. 46, pl. x, f. 8, 1895 [1896]; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. i, f. 17, 1892.

Amboy clay: No location.

Cretaceous: Tottenville, Staten Island.

**Dammara microlepis** Heer, Newby. = *Juniperus macilenta*.

**Dammara (?) cliffwoodensis** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 128, pl. xi, f. 5-8, 1897.

Clay marl (Upper cretaceous): Cliffwood, New Jersey.

**DAMMARITES** Presl. In Sternberg, Vers., vol. ii, p. 203, 1833.

**Dammarites caudatus** Lx. Fl. Dak. Gr., p. 32, pl. i, f. 9, 10, 1892.

*Podozamites caudatus* Lx. Cret. and Tert. Fl., p. 29, 1883.

*Podozamites praelongus* Lx. Cret. and Tert. Fl., p. 29, 1883.

Dakota group: Kansas.

**Dammarites dubius** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 8, 1893 [1894].

Upper Cretaceous: Nanaimo.

**Dammarites emarginatus** Lx. Fl. Dak. Gr., p. 33, pl. i, f. 11, 1892.

*Podozamites emarginatus* Lx. Cret. and Tert. Fl., p. 29, 1883.

Dakota group: Kansas.

**DAPHNOGENE** Unger. Synop. Pl. Foss., p. 227, 1845.

**Daphnogene anglica** ? Heer. Fl. Tert. Helv., vol. iii, p. 315, 1859; Lx., Ann. Rept., op. cit., p. 401, 1873 [1874]; Tert. Fl., p. 222, pl. xxxvii, f. 9, 1878.

Denver group: Golden, Colorado.

*Daphnogene cretacea* Lx. = *Cinnamomum Scheuchzeri*.

*Daphnogene elegans* Wat.-Ward = *Diospyros ficoidea*.

*Daphnogene Heerii* Lx. = *Cinnamomum Heerii*.

*Daphnogene lanceolata* Ung. = *Cinnamomum lanceolatum*.

**DAPHNOPHYLLUM** Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 17, 1869.

**Daphnophyllum angustifolium** Lx. Fl. Dak. Gr., p. 98, pl. xxxvi, f. 8, 1892.

Dakota group: Kansas.

**Daphnophyllum dakotense** Lx. Fl. Dak. Gr., p. 99, pl. li. f. 1-4; pl. lii, f. 1, 1892.

Dakota group: Kansas.

**Daphnophyllum** sp., Lx. Rept. on Clay in N. J., p. 29, 1878=?

Amboy clay: Sayreville, New Jersey.

**DAVALLIA** Smith. Mem. Act. Turin, vol. v, p. 414, 1791.

**Davallia (Stenoloma) tenuifolia** Sw. Dawson, Rept on Geol. and Res. in Vic. 49th Parallel, Appen. A, p. 329, 1875.

Canadian Upper Laramie: Porcupine Creek.

**DAVALLITES** Dawson. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

**Davallites Richardsoni** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 18-18b, 1882 [1883].

Upper Cretaceous: Protection Island.

**DELESSERIA** Lam. Ann. Mus., vol. xx, p. 122, 1813.

**Delesseria fulva** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873]; Tert. Fl., p. 39, pl. i, f. 10, 1878.

Laramie group: Golden, Colorado.

**Delesseria incrassata** Lx. = *Caulerpites incrassatus*.

**Delesseria ligulata** Lx. = *Caulerpites ligulatus*.

**DEWALQUEA** Saporta and Marion. Mém. cour. et des Sav. étrangers de l'Académie, vol. xxxvii, p. 55, 1874.

**Dewalquea dakotensis** Lx. Fl. Dak. Gr., p. 211, pl. lix, f. 5, 6, 1892.

Dakota group: Kansas.

**Dewalquea grönlandica** Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 87, pl. xxix, f. 18, 19; xlii, f. 11, 1882; Newby, Fl. Amboy Clays, p. 129, pl. xli, f. 2, 3, 12, 1895 [1896].

Amboy clay: New Jersey.

**Dewalquea Haldemiana** (Deb.) Sap. and Mar. Essai, p. 60, pl. 7, f. 1, 2, 1874; Lx., Proc. U. S. Nat. Mus., vol. x, p. 46, 1887; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. ii, f. 10, 2a, 1892.

Cretaceous: Upper Kanab Valley, Utah; Staten Island.

**Dewalquea insignis** Hos. and v. d. Marck. Palæontogr., vol. xxvi, p. 172 [48 of reprint], pl. 32, 33, 34, 1880; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. i, f. 9, 1892.

Cretaceous: Staten Island.

**Dewalquea primordialis** Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 18, pl. A, f. 10, 1893.

Dakota group: New Ulm, Minnesota.

**Dewalquea trifoliata** Newby. Fl. Amboy Clays, p. 129, pl. xxii, f. 4-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**DICKSONIA** Presl. Pterid., p. 135, 1836.

**Dicksonia munda** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 5, 5a, 1885 [1886].

Mill Creek series: Mill Creek.

**Dicksonia** sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 5, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

**DIOÖNITES**. Miquel. Tijdschr. v. Wis- en Nat.-Wetens., vol. iv, p. 211 (7 of reprint), 1851.

**Dioönites borealis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iii, f. 37, 1882 [1883].

Lower Cretaceous?: Willow Creek, Northwest Territory.

Kootanie: Martin Creek and Canmore, British Columbia.

**Dioönites Buchianus** (Ett.) Born. Org. Reste d. Lettenkohlegr. Thüringens, p. 57, 1856; Font., Potomac Fl., p. 182, pl. lxxviii, f. 1; lxxix, f. 1, 3; lxx, f. 2, 3; lxxi, f. 1; lxxii, f. 1, 2; lxxiii, f. 1-3; lxxiv, f. 1-3, 1889.

Pterophyllum Buchianum Ett. Fl. d. Wealdenb., p. 21, 1852.

Potomac formation: James River, Trents Reach, Dutch Gap Canal, Kankeys, and near Telegraph Station, Virginia.

Trinity division: Glenrose, Texas.

**Dioönites Buchianus angustifolius** Font. Potomac Fl., p. 185, pl. lxxvii, f. 6; lxxviii, f. 4; lxxi, f. 2, 1889.

Potomac formation: Dutch Gap, Kankeys, and Occoquan, Virginia.

Trinity division: Glenrose, Texas.

Horsetown beds: Shasta County, California.

**Dioönites Buchianus obtusifolius** Font. Potomac Fl., p. 184, pl. clxxviii, f. 3, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Dioönites Buchianus rarineris** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 264, pl. xxxvi, f. 3, 4, 1893.

Trinity division: Glenrose, Texas.

Knoxville beds: Tehama County, California.

**Dioönites columbianus** Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 91, 1892 [1893].

Cycadeospermum (Dioönites) columbianus Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 69, pl. i, f. 1-12, 1873.

Lower Cretaceous: Skidegate Channel, Queen Charlotte Island.

**Dioönites Dunkerianus** (Göpp.) Miq. Tijdschr. v. Wis- en Nat.-Watens., vol. iv, p. 212, 1851; Font. Proc. U. S. Nat. Mus., vol. xvi, p. 265, pl. xxxvi, f. 12; xxxvii, f. 1, 1893.

Trinity division: Glenrose, Texas.

Horsetown beds: Shasta County, California.

**DIOSCOREA** Plumier ex Linnæus. Gen., ed. i, p. 306, 1737.

**Dioscorea? cretacea** Lx. Cret. Fl., p. 56, pl. xxviii, f. 10, 1874.

Dakota group: Western Kansas.

**DIOSPYROS** Linnæus. Gen., ed. i, p. 143, 1737.

**Diospyros alaskana** Schimp. Pal. Vég., vol. ii, p. 949, 1872.

*Diospyros lancifolia*\* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Heer, Neue Denkschr., vol. xxi, p. 8, pl. i, f. 10-12; pl. ii, f. 1-3, 1865.

[\* Preoccupied.]

Eocene?: Alaska; Cherry Creek, Oregon; Bellingham Bay.

Laramie group?: Evanston, Wyoming.

**Diospyros ambigua** Lx. Cret. and Tert. Fl., p. 60; Fl. Dak. Gr., p. 110, 1892.

*Diospyros anceps* Lx. Cret. Fl., p. 89, pl. vi, f. 6, 1874.

*Quercus anceps* Lx. Am. Journ. Sci., vol. xlv, p. 96, 1868. [*D. anceps* preoccupied by sp. of Heer.]

Dakota group: Nebraska.

**Diospyros anceps** Heer. Fl. Tert. Helv., vol. iii, p. 12, pl. cii, f. 15-18, 1859; Lx., Proc., U. S. Nat. Mus., vol. v, p. 448, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

*Diospyros anceps* Lx. = *Diospyros ambigua*.

**Diospyros apiculata** Lx. Fl. Dak. Gr., p. 110, pl. xiv, f. 3, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

**Diospyros brachysepala** Al. Br. Neues Jahrb. f. Min. 1845, p. 170, 1845; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1872 [1873]; Tert. Fl., p. 232, pl. xl, f. 7-10; pl. xliii, f. 6, 1878.

*Rhamnus inæqualis* Lx. Ann. Rept., op. cit., p. 405, 1873 [1874]; Tert. Fl., p. 279, pl. lii, f. 16, 1878.

Laramie group: Golden, Sand Creek, Sedalia, Colorado; Black Buttes and Hodges Pass, Wyoming.

Fort Union group: Yellowstone River, Montana.

Green River group: Florissant, Colorado.

Montana formation?: Point of Rocks, Wyoming.

**Diospyros? celastroides** Lx. Fl. Dak. Gr., p. 113, pl. xx, f. 7, 1892.

Dakota group: Kansas.

**Diospyros Copeana** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 414, 1873 [1874]; Tert. Fl., p. 232, pl. xl, f. 11, 1878.

Green River group: Elko Station, Nevada.

**Diospyros eminens** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. x, f. 40, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Diospyros? ficoidea** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept., op. cit., p. 314, 1874 [1876]; Tert. Fl., p. 231, pl. xl, f. 5, 6, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 105, pl. xlix, f. 3, 4, 1887.

*Daphnogene elegans* Wat. Ward, Bull. U. S. Geol. Surv., no. 37, p. 51, pl. xxv, f. 1, 1887.

Fort Union group: Clear Creek and Burns Ranch, Montana.

Laramie group: Black Buttes and Hodges Pass, Wyoming.

*Diospyros laucifolia* Lx. = *Diospyros alaskana*.

***Diospyros nitida*** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. iii, f. 10, 1882 [1883].

——: Peace River, Northwest Territory.

?***Diospyros obtusata*** Ward. Bull. U. S. Geol. Surv., no. 37, p. 105, pl. xlix, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

***Diospyros primæva*** Heer. Phyll. Crét. d. Nebr., p. 19, pl. i, f. 6, 7, 1866; Lx., Fl. Dak. Gr., p. 109, pl. xx, f. 1-3, 1892; Newby., Fl. Amboy Clays, p. 124, pl. xxx, f. 1-5, 1895 [1896].

Dakota group: Nebraska and Kansas.

Cretaceous: Glen Cove, Long Island.

Amboy clay: South Amboy, New Jersey.

***Diospyros pseudoanceps*** Lx. Fl. Dak. Gr., p. 111, pl. xxii, f. 1, 1892; Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 17, pl. B, f. 6, 1893.

Dakota group: Kansas; New Ulm, Minnesota.

***Diospyros rotundifolia*** Lx. Cret. Fl., p. 89, pl. xxx, f. 1, 1874; Fl. Dak. Gr., p. 112, pl. xvii f. 8-11, 1892; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 53, pl. 179, f. 2, 1894.

Dakota group: Western Kansas.

Cretaceous: Glen Cove, Long Island.

***Diospyros Steenstrupi***? Heer. Fl. Foss. Arct., vol. vii, p. 32, pl. lxiv, f. 1, 1883; Lx., Fl. Dak. Gr., p. 111, pl. xvi, f. 9, 1892.

Dakota group: Kansas; Staten Island?

***Diospyros stenosepala*** Heer. Fl. Foss. Alask., p. 35, pl. viii, f. 7, 8, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872].

Eocene?: Alaska; Snake River, Yellowstone National Park.

***Diospyros vancouverensis*** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 28, pl. viii, f. 32, 1882 [1883].

Upper Cretaceous: Nanaimo; Port McNeill, Vancouver Island.

***Diospyros virginiana Turneri*** Lx. Proc. U. S. Nat. Mus., vol xi, p. 35, 1888.

Miocene: Contra Costa, California.

***Diospyros Wodani*** Ung. Gen. et Sp. Pl. Foss., p. 435, 1850; Syll. Pl. Foss., pt. iii, p. 27, pl. ix, f. 10-12, 1859; Lx., Tert. Fl., p. 233, pl. lix, f. 13, 1878.

*Calycites hexaphylla* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1872 [1873].

Laramie group?: Evanston, Wyoming.

***Diospyros* (calyx)** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. x, f. 41, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

***Diospyros* sp.**, Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignitic Tertiary: Porcupine Creek.

***Diplazium Muelleri***? Heer, Lx. = *Asplenium Crossii*.

**DISTICHIMUM** Bruchman Schimper and Gumbel. Bryol. Europ. Foss., p. 18-20, 1846.

**Distichium capillaceum** Bruch. and Schimp. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 1896.

Pleistocene: Long Portage, Missinaibi River.

**DOMBEYOPSIS** Unger. Steiermärkische Zeitschr. Gratz, vol. ix, 1 heft, p. 47 (?) [24 of reprint], 1848; Gen. et Sp. Pl. Foss., p. 447, 1850. *Dombeyopsis æquifolia* Göpp. Lx. = *Ficus tiliaefolia*.

**Dombeyopsis grandifolia?** Ung. Gen. et Sp. Pl. Foss., p. 447, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1873 [1874]; Tert. Fl., p. 255, pl. xlvii, f. 6, 1878.

Denver group: Golden, Colorado.

**Dombeyopsis obtusa** Lx. Ann. Rep. U. S. Geol. and Geogr. Surv. Terr., p. 375, 1872 [1873]; Tert. Fl., p. 255, pl. xlvii, f. 4, 5, 1878.

Denver group: Golden, Colorado.

Laramie group: Golden, Coal Creek, Colorado.

*Dombeyopsis obtusiloba* Lx. var. ? = *Menispermities obtusiloba*.

*Dombeyopsis occidentalis* Lx. = *Ficus occidentalis*.

**Dombeyopsis platanoides** Lx. Tert., Fl. p. 254, pl. xlvii, f. 1, 2, 1878.

*Quercus platania* var., *rotundifolia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1872 [1873].

Laramie group: Bozeman Coal Field, Montana.

*Dombeyopsis tiliaefolia* (Al. Br.) Ung. = *Ficus tiliaefolia*.

**Dombeyopsis trivialis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 255, pl. xlvii, f. 3, 1878.

Laramie group: Golden, Colorado.

**DROSERA** Linnaeus. Syst., ed. i, 1735.

**Drosera rotundifolia** L. Dn. Can. Nat., vol. iii, new ser., p. 70, 1868; Geol. Hist. Pl., p. 228, 1888.

Pleistocene: Greens Creek on Ottawa River, Canada.

**DRUPA** Lesquereux. Am. Journ. Sci., vol. xxxii, 2d ser., p. 360, 1861.

**Drupa rhabdosperma** Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 150, 1861.

——: Brandon, Vermont.

*Dryandroides lignitum* (Ung.) Ett. Lx. = *Myrica lignitum*.

**DRYOPHYLLUM** Debey. Sur l. feuilles Querciformes d'Aix-la-Chapelle, p. 7, 1881.

**Dryophyllum aquamarum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 26, pl. x, f. 2-4, 1887.

Laramie group: Black Buttes, Wyoming.

*Dryophyllum basidentatum* Ward = *Quercus carbonensis*.

*Dryophyllum Bruneri* Ward = *Dryophyllum subfalcatum*.

**Dryophyllum (Quercus) crenatum** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 371, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 301, 1874 [1876]; Tert. Fl., p. 162, pl. lxii, f. 10, 11, 1878.

Montana formation: Point of Rocks, Wyoming.



*Dryophyllum elongatum* Dn. = *Quercus occidentalis*.

***Dryophyllum falcatum*** Ward. Bull. U. S. Geol. Surv., no. 37, p. 27, pl. xi, f. 1, 1887.

Laramie group: Hodges Pass, Wyoming.

*Dryophyllum* (*Quercus*) *Holmesii* Lx. = *Quercus Holmesii*.

*Dryophyllum latifolium* Lx. = *Quercus latifolia*.

*Dryophyllum neillianum* Dn. = *Quercus occidentalis*.

*Dryophyllum occidentale* Dn. = *Quercus occidentalis*.

*Dryophyllum primordiale* Lx. = *Quercus primordialis*.

*Dryophyllum* (*Quercus*) *salicifolium* Lx. = *Quercus Holmesii*.

***Dryophyllum stanleyanum*** Dn. Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 147, pl. vii, f. 13, 1895-96.

Eocene: Stanley Park, Vancouver, British Columbia.

***Dryophyllum subfalcatum*** Lx. Bull. U. S. Geol. and Geogr. Serv. Terr., vol. i, p. 379, 1875; Ann. Rept., p. 301, 1874 [1876]; Tert. Fl., p. 163, pl. lxiii, f. 10, 1878.

*Quercus gracilis* Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883]; Plates, pl. lxvii, f. 4 [ined].

*Dryophyllum Bruneri* Ward. Bull. U. S. Geol. Surv., no. 37, p. 27, pl. x., f. 5-8, 1887.

Montana formation: Point of Rocks, Wyoming.

Laramie group: Hodges Pass, Wyoming.

*Dryophyllum* sp., Dn. = *Quercus occidentalis*.

**DRYOPTERIS** Adanson. Fam. Pl., vol. ii, p. 20, 1763.

***Dryopteris angustipinnata*** (Font.) n. comb.

*Aspidium angustipinnatum* Font. Potomac Fl., p. 98, pl. xvi, f. 1, 3, 8; xvii, f. 1; xix, f. 10, 1889.

Potomac formation: Trents Reach, Dutch Gap Canal, Fredericksburg, and near Potomac Run, Virginia.

***Dryopteris angustipinnata montanense*** (Font.) n. comb.

*Aspidium angustipinnatum montanense* Font. Proc. U. S. Nat. Mus., vol. xv, p. 491, pl. lxxxiv, f. 1, 1a, 1892.

Kootanie: Great Falls, Montana.

***Dryopteris arguta*** (Lx.) n. comb.

*Lathraea arguta* Lx. Am. Journ. Sci., vol. lxxv, p. 207, 1868.

*Aspidium Lakesii* (Lx.) Kn. Proc. Biol. Soc. Wash., vol. vii, p. 154, 1892; Bull. U. S. Geol. Surv., no. 105, p. 45, pl. vi, f. 1-4, 1893.

*Sphenopteris Lakesii* Lx. Tert. Fl., p. 49, pl. ii, f. 1, 1a, 1878.

*Sphenopteris eocenica* Ett. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 376, 1872 [1873].

*Sphenopteris membranacea* Lx. Ann. Rept., op. cit., p. 394, 1873 [1874]; Tert. Fl., p. 50, pl. ii, f. 2-3a, 1878.

Denver group: Golden, Colorado.

***Dryopteris cystopteroides*** (Font.) n. comb.

*Aspidium cystopteroides* Font. Potomac Fl., p. 99, pl. xvi, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

***Dryopteris dentata*** (Font.) n. comb.

*Aspidium dentatum* Font. Potomac Fl., p. 102, pl. xxv, f. 6, 7, 14, 15, 1889.

Potomac formation: Dutch Gap Canal, near Potomac Run, near telegraph station, Virginia.

**Dryopteris elliptica** (Font.) n. comb.

*Aspidium ellipticum* Font. Potomac Fl., p. 95, pl. xiii, f. 9, 10, 1889.

Potomac formation: Near Potomac Run, near Brooke, Virginia.

**Dryopteris fredericksburgense** (Font.) n. comb.

*Aspidium fredericksburgense* Font. Potomac Fl., p. 94, pl. xi, f. 1-6; xii, f. 1-6; xvi, f. 9; xix, f. 6, 7, 1889.

Potomac formation: Fredericksburg and near Telegraph Station, Virginia.

Kootanie: Anthracite, British Columbia; Great Falls, Montana.

**Dryopteris heterophylla** (Font.) n. comb.

*Aspidium heterophylla* Font. Potomac Fl., p. 96, pl. xiv, f. 1-5; xv, f. 1-5, 1889.

Potomac formation: Fredericksburg, Virginia.

Knoxville beds: Tehama County, California.

**Dryopteris idahoensis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 721, pl. xcix, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

**Dryopteris Kennerleyi** (Newby.) n. comb.

*Aspidium Kennerleyi* Newby. Bost. Journ. Nat. Hist., vol. vii, p. 513, 1863.

Upper Cretaceous: Vancouver Island (Dn.).

Upper Cretaceous?: Newcastle coal, Vancouver Island.

**Dryopteris macrocarpa** (Font.) n. comb.

*Aspidium macrocarpum* Font. Potomac Fl., p. 103, pl. xvii, f. 2, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Dryopteris microcarpa** (Font.) n. comb.

*Aspidium microcarpum* Font. Potomac Fl., p. 103, pl. lix, f. 2, 12; lx, f. 6, 7, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Dryopteris monocarpa** (Font.) n. comb.

*Aspidium monocarpum* Font. Proc. U. S. Nat. Mus., vol. xv, p. 490, pl. lxxxiii, f. 4-6a; pl. lxxxiv, f. 3, 3a, 1892.

Kootanie: Great Falls, Montana.

**Dryopteris montanense** (Font.) n. comb.

*Aspidium montanense* Font. Proc. U. S. Nat. Mus., vol. xv, p. 490, pl. lxxxii; f. 1-3; pl. lxxxiii, f. 2-3a, 1892.

Kootanie: Great Falls, Montana.

**Dryopteris oblongifolia** (Font.) n. comb.

*Aspidium oblongifolium* Font. Potomac Fl., p. 100, pl. xxi, f. 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Dryopteris Oerstedii?** (Heer) n. comb.

*Aspidium Oerstedii?* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 30, pl. xxxiv, f. 3, 4, 1882; Font., Potomac Fl., p. 99, pl. xix, f. 4, 1889.

Potomac formation: Near Telegraph Station, Virginia.

**Dryopteris parvifolia** (Font.) n. comb.

*Aspidium parvifolium* Font. Potomac Fl., p. 100, pl. xxi, f. 6; xxiv, f. 8; xxv, f. 10; xxvi, f. 1, 14, 16, 17, 1889.

Potomac formation: Fredericksburg, Dutch Gap Canal, Virginia.

**Dryopteris pinnatifida** (Font.) n. comb.

*Aspidium pinnatifidum* Font. Potomac Fl., p. 101, pl. xxi, f. 15, 1889.

Potomac formation: Bank near Brooke, Virginia.

**Dryopteris (Lastrea) polypodioides?** (Ett.) n. comb.

*Lastrea* (*Goniopteris*) *polypodioides*? (Ett.) Lesquereux. *Tert. Fl.*, p. 57, pl. iv, f. 11, 12, 1878.

*Goniopteris polypodioides* Ett. *Lesquereux. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 394, 1873 [1874].

Laramie group: Sand Creek, Colorado.

**Dryopteris virginica** (Font.) n. comb.

*Aspidium virginicum* Font. *Potomac Fl.*, p. 97, pl. xv, f. 7; xxi, f. 14.

Potomac formation: Near Potomac Run and near Brooke, Virginia.

**Dryopteris** sp.

*Aspidium* sp., Kn. *Bull. Geol. Soc. Am.*, vol. viii, p. 140, 1897.

Laramie group?: North Fork Dutton Creek, Wyoming.

**ECHITONIUM** Unger. *Syn. Pl. Foss.*, p. 230, 1845.

**Echitonium Sophieæ** O. Web. *Palæontogr.*, vol. ii, p. 187, pl. xx, f. 17, 1852; *Lx., Am. Journ. Sci.*, vol. xlv, f. 206, 1868; *Proc. U. S. Nat. Mus.*, vol. x, p. 41, 1887.

Laramie group?: Marshalls, Colorado.

——?: White River, Dakota.

**ELÆAGNUS** (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

**Elæagnus inæqualis** Lx. *Am. Journ. Sci.*, vol. xxvii, p. 364, 1859; *Geol. Tenn.*, p. 428, pl. K, f. 7, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**ELÆODENDRON** Jacques f. *Nova Acta Helv.*, vol. i, p. 36, 1787.

**Elæodendron helveticum** Heer. *Fl. Tert. Helv.*, vol. iii, p. 71, pl. cxxii, f. 5, 1859; *Lx., Proc. U. S. Nat. Mus.*, vol. v, p. 449, 1882 [1883].

Eocene?: Unga Island, Alaska.

**Elæodendron polymorphum** Ward. *Bull. U. S. Geol. Surv.*, no. 37, p. 84, pl. xxxviii, f. 1-7, 1887.

Fort Union group: Burns Ranch, Montana.

**Elæodendron serrulatum** Ward. *Bull. U. S. Geol. Surv.*, no. 37, p. 83, pl. xxxvii, f. 3-5, 1887.

Fort Union group: Burns Ranch and Seven-Mile Creek, Montana.

**Elæodendron speciosum** Lx. *Fl. Dak. Gr.*, p. 175, pl. xxxvi, f. 2, 3, 1892.

Dakota group: Kansas.

**ELODEA** Michaux. *Fl. Bor. Am.*, vol. i, p. 20, 1803.

**Elodea canadensis** ? Mx. *Penhallow, Bull. Geol. Soc. Am.*, vol. i, p. 325, 1890.

Pleistocene: Rolling River, Manitoba.

**EMBOTHRITES** Unger. *Gen. et Sp. Pl. Foss.*, p. 428, 1850.

**Embothrites ? daphneoides** Lx. *Cret. and Tert. Fl.*, p. 51, 1883.

*Embothrium ? daphneoides* Lx. *Cret. Fl.*, p. 87, pl. xxx, f. 10, 1874.

Dakota group: Kansas.

*Embothrium ? daphneoides* Lx. = *Embothrites ? daphneoides*.

**ENCEPHALARTOPSIS** Fontaine. Potomac Fl., p. 174, 1889.

**Encephalartopsis nervosa** Font. Potomac Fl., p. 174, pl. lxx, f. 4; lxxi, f. 3, 4; lxxii, f. 3, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

**ENCEPHALARTOS** Lehman. Pugill., vol. vi, p. 3, 1834.

**Encephalartos cretaceus** Lx. Fl. Dak. Gr., p. 29, pl. i, f. 12, 1891.

Dakota group: Kansas.

**ENGELHARDTIA** Leschen. In Blume, Bijdr., 528, 1825.

**Engelhardtia oxyptera** Sap. Études (Ann. d. Sci. Nat., 5th ser., Bot., vol. 4), p. 344, pl. xii, f. 2, 1865; Lx., Cret. and Tert. Fl., p. 192, 1883.

Green River group: Florissant, Colorado.

**EQUISETUM** (Tournefort) Linnæus. Gen. Pl., p. 322, 1737.

**Equisetum arvense** L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

**Equisetum globulosum** Lx. Proc. U. S. Nat. Mus., vol. v, p. 444, 1882 [1883]; Cret. and Tert. Fl., p. 222, pl. xlviii, f. 3, 1883.

Eocene?: Alaska.

Fort Union group: Bad Lands, Dakota.

**Equisetum Haydenii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 284, 1871 [1872]; Tert. Fl., p. 67, pl. vi, f. 2-4, 1878.

Green River group: Barrell Springs, Wyoming.

Denver group?: Carbon, Wyoming.

**Equisetum Hornii** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 23, 1888.

Eocene?: Cherry Creek, Oregon.

**Equisetum lævigatum** Lx. Tert. Fl., p. 68, pl. vi, f. 6, 7, 1878.

*Equisetum? lævigatum* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874].

Laramie group: Golden and Sand Creek, Colorado.

**Equisetum Lesquereuxii** nom. nov.

*Equisetum limosum?* L.\* Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1871 [1872]; Tert. Fl., p. 69, pl. vi, f. 5, 1878. [\*Not the living *E. limosum*!]

Miocene?: Yellowstone National Park.

**Equisetum limosum** L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 71, 1896.

Pleistocene: Greens Creek and Besserer's Wharf, Ottawa River.

*Equisetum limosum?* L. Lx. = *Equisetum Lesquereuxii*.

**Equisetum Lyelli** Mantell. Geol. S. E. England 1833, p. 217, 1833; Font., Potomac Fl., p. 65, pl. i, f. 7; pl. ii, f. 4, 5, 1889; Dn., Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 83, f. 1, 1892 [1893].

Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.

Kootanie: Canada.

**Equisetum marylandicum** Font. Potomac Fl., p. 65, pl. ii, f. 10, 1889.

Potomac formation: Baltimore, Maryland.

**Equisetum nodosum** Lx. = *Phragmites* cretaceus.

**Equisetum oregonense** Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Currant Creek, Oregon.

**Equisetum Parlatorii** (Heer) Schimp. Pal. Vég., vol. i, p. 261, 1869.

*Physagenia Parlatorii* Heer. Fl. Tert. Helv., vol. i, p. 109, pl. xlii, f. 2-17, 1885; Dn., Rept. Geol. and Res., near 49th Parallel, Appen. A, p. 329, pl. xvi, f. 3, 4, 1875.

——: Great Valley, Canada.

**Equisetum robustum** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 513, 1863.

——: Bellingham Bay, Washington.

**Equisetum scirpoides** Mx. Dn., Can. Nat., vol. iii, new ser., p. 73, 1868; Geol. Hist. Pl., p. 230, 1888.

Pleistocene: Greens Creek, Ottawa River, Canada.

**Equisetum similkamense** Dn. Geol. Surv. Canada, Rept. of Progress 1877-78, p. 186, pl. B, 1878; Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 76, f. 1-1*d*, 1890.

Eocene?: Similkameen Valley, British Columbia.

**Equisetum sylvaticum?** L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890.

Pleistocene: Canada.

**Equisetum texense** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 263, pl. xxxvi, f. 1, 1893.

Trinity division: Glenrose, Texas.

Knoxville beds: Tehama County, California.

**Equisetum virginicum** Font. Potomac Fl., p. 63, pl. i, f. 1-6, 8; pl. ii, f. 1-3, 6, 7, 9, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Equisetum wyomingense** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874]; Tert. Fl., p. 69, pl. vi, f. 8-11, 1878.

Green River group: Green River, Wyoming.

**Equisetum** sp., Dn. Rept. Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Canadian Upper Laramie: Porcupine Creek.

**Equisetum** sp., Paisley. Can. Nat., 2d ser., vol. vii, p. 270, 1875.

Post pliocene: Bathurst, New Brunswick.

**Equisetum**, rootlets of, Lx. Rept. on Clays in N. J., p. 28, 1878.

Amboy clay: Washington, New Jersey.

**Equisetum** sp. Lx. Cret. and Tert. Fl., p. 239, pl. i, f. 8, 1883.

Miocene: Corral Hollow, California.

**Equisetum** sp., Lx. Cret. and Tert. Fl., p. 239, pl. 1, f. 7, 1883.

Miocene: Contra Costa, California.

**Equisetum** sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 22, pl. i, f. 2, 1886 [1887].

Canadian Upper Laramie: Great Valley, Canada.

**Equisetum** sp., Font. Potomac Fl., p. 66, pl. clxx, f. 8, 1889.

Potomac formation: Baltimore, Maryland.

**Equisetum** sp., Font. Potomac Fl., p. 65, pl. ii, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Equisetum** sp., Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 71, 1896.

Pleistocene: Scarboro Heights, Ontario.

**Equisetum** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**Equisetum** sp., Kn. Eighteenth Ann. Rep. U. S. Geol. Surv., pt. iii, p. 722, 1898.

Payette formation: Idaho City, Idaho.

**EREMOPHYLLUM** Lesquereux. Cret. Fl., p. 107, 1878.

**Eremophyllum fimbriatum** Lx. Cret. Fl., p. 107, pl. viii, f. 1, 1874.

Ficus? fimbriatus Lx. Am. Journ. Sci., vol. xli, p. 96, 1868.

Dakota group: Decatur, Nebraska.

**ERIOCAULON** Linnaeus. Gen., ed. ii, p. 35, 1742.

**Eriocaulon? porosum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]; Tert. Fl., p. 106, pl. xvi, f. 2, 2a, 1878.

Laramie group: Sand Creek and Murpheys, near Golden, Colorado.

**EUCALYPTOPHYLLUM** Fontaine. Potomac Fl., f. 325, 1889.

**Eucalyptophyllum oblongifolium** Font. Potomac Fl., p. 325, pl. clxii, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

**EUCALYPTUS** L'Héritier. Sert. Angl., p. 18, 1788.

**Eucalyptus? americana** Lx. Tert. Fl., p. 296, pl. lix, f. 11, 12, 1878.

Eucalyptus americanus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 7, 1871 [1872].

Green River group: Green River Station, Wyoming.

**Eucalyptus? angustifolia** Newby. Fl. Amboy Clays, p. 111, pl. xxxii, f. 1, 6, 7, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**Eucalyptus? attenuata** Newby. Fl. Amboy Clays, p. 111, pl. xvi, f. 2, 3, 5, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**Eucalyptus dakotensis** Lx. Fl. Dak. Gr., p. 137, pl. xxxvii, f. 14-19, 1892.

Dakota group: Kansas.

**Eucalyptus Geinitzi** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 93, pl. xix, f. 1c; lxxv, f. 4-9; xlvi, f. 12 c, d, 13, 1882; Lx., Fl. Dak. Gr., p. 138, pl. xxxvii, f. 20, 1892; Newby., Fl. Amboy Clays, p. 110, pl. xxxii, f. 2, 12, 15, 16, 1895 [1896].

Myrtophyllum (Eucalyptus?) Geinitzi Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 116. pl. xxxii, f. 14-17; xxxiii, f. 6b, 1874.

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Staten Island; Glenn Cove, Long Island; Marthas Vineyard.

**Eucalyptus Gouldii** Ward. Bull. Torr. Bot. Club, vol. xxiv, p. 576, f. (in text) 1, 2, 1897.

Dakota group: Clark County, Kansas.

**Eucalyptus Hæringiana?** Ett. Abhandl. d. k. k. Geol. Reichsanstalt, vol. ii, pt. 3, p. 84, pl. xxxviii, f. 2-25, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1872 [1873]; Tert. Fl., p. 296, pl. lix, f. 10, 1878.

Laramie group: Black Buttes, Wyoming.

**Eucalyptus? nervosa** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 56, pl. 174, f. 10, 1894. Newby. Fl. Amboy Clays, p. 112, pl. xxxii, f. 3-5, 8, 1895 [1896].

Cretaceous: Sea Cliff, Long Island.

**Eucalyptus? parvifolia** Newby. Fl. Amboy Clays, p. 112, pl. xxxii, f. 9, 10, 1895 [1896.]

Amboy clay: South Amboy, New Jersey.

**EUGENIA** Micheli ex Linnæus. Syst., ed. i., 1735.

**Eugenia primæva** Lx. Fl. Dak. Gr., p. 137, pl. llii, f. 5-9, 1892.

Dakota group: Kansas.

**EUONYMUS** Linnæus. Hort. Cliff, p. 39, 1737.

**Euonymus flexifolius** Lx. Cret. and Tert. Fl., p. 183, pl. xxxviii, f. 13, 1883.

Green River group: Uinta County, formerly but wrongfully called Randolph County, Wyoming.

**Euonymus xantholithensis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 82, pl. xxxvii, f. 1, 2, 1887.

Fort Union group: Burns Ranch, Montana.

**FAGOPHYLLUM** Nathorst. Pal. Abhandl. v. Dames u. Kayser, vol. iv, heft 3, p. 5, 1888.

**Fagophyllum nervosum** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 58, pl. vii, f. 16, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

**Fagophyllum retosum** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 15, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

**FAGUS** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Fagus Antipoffii** Abich. Mém. Acad. Sci. St. Petersburg, ser. vi, Sci. math. et physiq., vol. vii, p. (35 of reprint) 572, pl. viii, f. 2, 1858; Heer, Fl. Foss. Arct., vol. ii, abt. ii, p. 30, pl. v, f. 4a; vii, f. 4-8; viii, f. 1, 1869.

Eocene?: Port Graham, Alaska.

Miocene: Table Mountain, California.

Laramie group?: Point of Rocks, Wyoming.

**Fagus castaneæfolia** Ung. = *Castanea castaneæfolia*.

**Fagus cretacea** Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Kansas.

**Fagus Deucalionis** Ung. Syn. Pl. Foss., p. 218, 1845; Lx., Proc. U. S. Nat. Mus., vol. v, p. 446, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

**Fagus Deucalionis** Ung. Lx., Ann. Rept., 1871, p. 292 = Unknown. [Not afterwards referred to by Lesquereux.]

Laramie group?: Evanston, Wyoming.

**Fagus Feroniæ** Ung. Syn. Pl. Foss., p. 219, 1845; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 413, 1873 [1874]; Tert. Fl., p. 146, pl. xix, f. 1-3, 1878.

Green River group: Elko Station, Nevada.

Eocene?: Port Graham, Alaska.

**Fagus ferruginea** Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 11, 1869; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Pleistocene?: Somerville, Fayette County, Tennessee.

Glacial: Morgantown, West Virginia.

**Fagus Hitchcockii** Lx. Am. Journ. Sci., vol. xxxii, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 126, 127, 1861.

——: Brandon, Vermont.

**Fagus macrophylla** Ung. Denkschr. Wien. Akad., vol. vii, p. (19 of reprint) 175, pl. ii, f. 10, 1854; Heer, Fl. Foss. Arct., vol. ii, abt. ii, p. 31, pl. viii, f. 2, 1869.

Eocene?: Port Graham, Alaska.

**Fagus orbiculata** Lx. Fl. Dak. Gr., p. 51, pl. xlvii, f. 6, 1892.

Dakota group: Ellsworth County, Kansas.

**Fagus polycladus** Lx. Am. Journ. Sci., vol. xlvi, p. 95, 1868.

Dakota group: Decatur, Nebraska; Kansas.

**Fagus proto-nucifera** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 6, 6a, 1882 [1883].

——: Peace River, Northwest Territory.

**Fagus pseudo-ferruginea** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 3, pl. ii, f. 14, 1878.

Miocene: Chalk Bluffs, California.



**FEILDENIOPSIS** Fontaine. Potomac Fl., p. 204, 1889.

**Feildeniopsis crassinervis** Font. Potomac Fl., p. 205, pl. lxxxvi, f. 5, 1889.

Potomac formation: Kankeys, Virginia.

**FICOPHYLLUM** Fontaine. Potomac Fl., p. 290, 1889.

**Ficophyllum crassinerve** Font. Potomac Fl., p. 291, pl. cxliv, f. 3; cxlv, f. 3; cxlvi, f. 1; cxlvii, f. 4; cxlviii, f. 1, 2, 4; clvii, f. 4; clxxiii, f. 10, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Deep Bottom, Virginia.

**Ficophyllum eucalyptoides** Font. Potomac Fl., p. 294, pl. cxiv, f. 1, 2, 1889.

Potomac formation: Near Brooke, Virginia.

**Ficophyllum serratum** Font. Potomac Fl., p. 294, pl. cxlv, f. 2; cxix, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

**Ficophyllum tenuinerve** Font. Potomac Fl., p. 292, pl. cxl, f. 3; cxli, f. 2; cxlx, f. 1, 4; cxlvii, f. 2; cxlix, f. 1, 3, 5; clvi, f. 1, 1889.

Potomac formation: Near Potomac Run and Fredericksburg, Virginia.

**FICUS** Tournefort ex Linnæus. Syst., ed. v, 1735.

**Ficus aligera** Lx. Fl. Dak. Gr., p. 84, pl. x, f. 3-6, 1892.

Dakota group: Cloud County, Kansas.

**Ficus alkalina** Lx. Cret. and Tert. Fl., p. 164, pl. xlv, f. 7-9, 1883.

Green River group: Alkali Station, Wyoming.

**Ficus alaskana** Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Eocene?: Cook Inlet and Admiralty Inlet, Alaska.

**Ficus Andræi** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

**Ficus? angustata** Lx. Cret. and Tert. Fl., p. 47, 1883.

Dakota group: Bluff Creek, Kansas.

**Ficus appendiculata** Heer. Fl. Tert. Helv., vol. ii, p. 67, pl. lxxxv, f. 12, 13, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 31, 1888.

Eocene?: Lassen County, California.

**Ficus arenacea** Lx., ex. p.=*Ficus lanceolata*.

**Ficus arenacea** Lx., ex. p.=*Ficus uncata*.

**Ficus arenacea brevipetiolata** Lx.=*Ficus uncata*.

**Ficus artocarpoides** Lx. Cret. and Tert. Fl., p. 227, pl. xlvii, f. 1-5, 1883.

Fort Union group: Bad Lands, Dakota.

**Ficus asarifolia** Ett. Denkschr. d. k. Akad. Wissensch., vol. xxvi, p. 156, 1867; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 366, 1875 [1876]; Ann. Rept., op. cit., p. 378, 1872 [1873]; Tert. Fl., p. 207, pl. lxi, f. 18-21, 1878.

Denver beds?: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks.

**Ficus asarifolia minor** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 367, 1875 [1876]; Tert. Fl., p. 208, 1878.

Montana formation: Point of Rocks, Wyoming.

**Ficus asiminæfolia** Lx. Cret. and Tert. Fl., p. 250, pl. lvi, f. 1-3, 1883.

Miocene?: Rock Corral, Placer County, California.

**Ficus atavina** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 69, 1882; Lx., Proc. U. S. Nat. Mus., vol. x, p. 40, 1887.

——: Upper Kanab Valley, Utah.

**Ficus auriculata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]; Tert. Fl., p. 206, pl. xxx, f. 4-6, 1878.

*Ficus truncata* ? Lx. [nec Heer, 1859]. Ann. Rept., op. cit., p. 400, 1873 [1874].

*Ficus subtruncata* Lx. Tert. Fl., p. 205, pl. xxx, f. 7-9, 1878.

Laramie group: Golden, Colorado.

Livingston beds: Bozeman coal field, Montana.

**Ficus austiniana** Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 14, pl. A, f. 5, 1893.

Dakota group: Cottonwood River, Minnesota.

**Ficus Beckwithii** Lx. Cret. and Tert. Fl., p. 46, pl. xvi, f. 5; pl. xvii, f. 3, 4, 1883.

Dakota group: Morrison, Colorado.

**Ficus Berthoudi** Lx. Bull. Mus. Comp. Zool., vol. xvi, p. 49, 1888.

Denver group: Golden, Colorado.

*Ficus Berthoudi* Lx. Fl. Dak. Gr., p. 78, 1892 = *Ficus Lesquereuxii*.

**Ficus cinnamomoides** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 417, pl. xvii, f. 8, 1869.

Eolignitic: Mississippi.

*Ficus Clintoni* Lx. = *Ficus planicostata* Clintoni.

**Ficus Condoni** Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Ficus contorta** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 31, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Ficus ? corylifolius** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

**Ficus crassipes** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 70, pl. xvii, f. 9a; pl. xxiv, f. 1, 2, 1882; Lx., Fl. Dak. Gr., p. 79, pl. xiii, f. 3, 1892.

Proteoids crassipes Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 110, 1874.

Dakota group: Kansas.

**Ficus Crossii** Ward = **Ficus uncata**.

**Ficus ? cuneatus** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 524, 1863.

Cretaceous?: Orcas Island, Washington.

**Ficus dalmatica** Ett. Denkschr. d. Wien. Akad., vol. viii, p. 13, pl. vii, f. 11, 1855; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 367, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 303, 1874 [1876]; Tert. Fl., p. 199, pl. lxiii, f. 3-5, 1878.

Laramie group: Coal Creek, Colorado.

Montana formation: Point of Rocks, Wyoming.

**Ficus deflexa** Lx. Fl. Dak. Gr., p. 80, pl. iii, f. 13; pl. xvi, f. 3, 1892.

Dakota group: Kansas.

**Ficus distorta** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 5, 1874 [1876].

Dakota group: Fort Harker, Kansas.

**Ficus ? fimbriatus** Lx. = **Eremophyllum fimbriatum**.

**Ficus Fredericksburgensis** Font. Potomac Fl., p. 295, pl. cxlviii, f. 3, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Ficus Gaudini** Lx. = **Ficus uncata**.

**Ficus glascœana** Lx. Cret. and Tert. Fl., p. 48, 1883; Fl. Dak. Gr., p. 76, pl. xiii, f. 1, 2, 1892.

Dakota group: Glascoe, Kansas.

**Ficus goldiana** Lx. = **Ficus planicostata** Clintoni.

**Ficus ? Halliana** Lx. Cret. Fl., p. 68, pl. xxviii, f. 3, 9, 1874.

Dakota group: Minnesota.

**Ficus Haydenii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394; 1872 [1873]; Tert. Fl., p. 197, pl. xxx, f. 1, 1878.

Laramie group: Black Buttes, Wyoming.

**Ficus inæqualis** Lx. Fl. Dak. Gr., p. 82, pl. xlix, f. 6-8; pl. l, f. 3, 1892.

Dakota group: Kansas.

**Ficus irregularis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 368, 1875 [1876]; Tert. Fl., p. 196, pl. xxxiv, f. 4-7; pl. lxiii, f. 9, 1878.

Ulmus? irregularis Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 378, 1872 [1873].

Denver group: Golden, Colorado.

Laramie group: Golden, Colorado; Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

**Ficus Jynx** Ung. Gen. et Sp. Pl. Foss., p. 413, 1850. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 414, 1873 [1874]; Tert. Fl., p. 193, pl. xxviii, f. 6, 1878.

Green-River group: Elko Station, Nevada.

**Ficus Krausiana** Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 15, pl. v. f. 3-6, 1869; Lx., Fl. Dak. Gr., p. 81, pl. 1, f. 5, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

**Ficus lanceolata** Heer. Fl. Tert. Helv., vol. ii, p. 62, pl. lxxxi, f. 2-5, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]; Tert. Fl., p. 192, pl. xxviii, f. 1-5, 1878.

*Ficus arenacea* Lx., ex. p. Ann. Rept., loc. cit., p. 300; Tert. Fl., p. 195, pl. xxix, f. 1, 4, 1878.

Laramie group: Marshall's mine, Coal Creek, and near Mount Carbon, Colorado.

**Ficus lanceolato-acuminata** Ett. Denkschr. Wien. Akad., vol. xxxii (Foss. Fl. v. Sagor), p. 182, pl. vi, f. 3, 4, 1872; Lx., Fl. Dak. Gr., p. 85, pl. xiii, f. 4, 1892.

Dakota group: Kansas.

**Ficus latifolia** (Lx.) n. comb.

*Ficus planicostata latifolia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1872 [1873]; Tert. Fl., p. 202, pl. xxi, f. 9, 1878.

Laramie group: Golden and Marshalls, Colorado; Black Buttes, Wyoming.

*Ficus laurophylla* Lx. = *Ficus reticulata*.

**Ficus laurophyllidia** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. x, f. 37, 1893 [1894].

Upper Cretaceous: Wellington mine, Nanaimo.

**Ficus Lesquereuxii** nom. nov.

*Ficus Berthoudi* \* Lx. Fl. Dak. Gr. p. 78, pl. xii, f. 3, 1892; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895. [\*Name preoccupied by *F. Berthoudi* of Lesquereux, 1888.]

Dakota group: Kansas.

Cretaceous: Marthas Vineyard.

**Ficus limpida** Ward. Bull. U. S. Geol. Surv., no. 37, p. 42, pl. xxii, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

**Ficus macrophylla** Lx. Fl. Dak. Gr., p. 76, pl. xi, f. 1, 1892.

Dakota group: Kansas.

**Ficus magnoliæfolia** Lx. Cret. and Tert. Fl., p. 47, pl. xvii, f. 5, 6, 1883.

Dakota group: Morrison, Colorado.

Upper Cretaceous: Vancouver Island.

**Ficus maxima** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 5, 1882 [1883].

— : Coal Brook, Northwest Territory.

**Ficus melanophylla** Lx. Fl. Dak. Gr., p. 83, pl. 1, f. 2, 1892.

Dakota group: Kansas.

**Ficus membranacea** Newby. Proc. U. S. Nat. Mus., vol. v., p. 512, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

**Ficus microphylla** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 18, pl. iv, f. 10, 11, 1878.

Miocene: Table Mountain and Shasta County, California.

**Ficus Mudgei** Lx. Fl. Dak. Gr., p. 83, pl. xii, f. 4, 1892.

Dakota group: Kansas.

**Ficus multinervis** Heer. Fl. Tert. Helv., vol. ii, p. 63, pl. lxxxi, f. 6-10, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]; Tert. Fl., p. 194, pl. xxviii, f. 7, 8, 1878.

Laramie group: Coal Creek, Colorado, etc.

—— ? : Graves County, Kentucky.

**Ficus myricoides** Hollick. In Newby., Fl. Amboy Clays, p. 71, pl. xxxii, f. 18; xli, f. 8, 9, 1895 [1896].

Amboy clay: No location.

**Ficus (Protocus) nervosa** Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Laramie group?: Evanston, Wyoming.

**Ficus oblanceolata** Lx. = *Pistacia oblanceolata*.

**Ficus occidentalis** Lx. Tert. Fl., p. 200, pl. xxxii, f. 4, 1878.

*Dombeyopsis occidentalis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873].

Denver group: Golden, Colorado.

**Ficus? oregoniana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. ix, f. 3, 1888.

Miocene: John Day Valley, Oregon.

**Ficus ovalis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Tert. Fl., p. 198, pl. xxx, f. 2, 1878.

—— ? : Pleasant Park, Colorado.

**Ficus ovata** Newby. Fl. Amboy Clays, p. 70, pl. xxiv, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Ficus planicostata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1872 [1873]; Tert. Fl., p. 201, pl. xxxi, f. 1-8, 10-12, 1878.

Denver beds: Golden, Colorado.

Laramie group: Coal Creek, Marshalls, Colorado; Black Buttes, Wyoming.

**Ficus planicostata Clintoni** (Lx.) n. comb.

*Ficus planicostata goldiana* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874]; Tert. Fl., p. 202, pl. xxxiii, f. 1, 1a, 2, 3, 1878.

*Ficus Clintoni* Lx. Ann. Rept., loc. cit., p. 393, 1872 [1873].

Denver beds: Golden, Colorado.

Eoligintic: Cross Lake, Louisiana.

**Ficus planicostata goldiana** Lx. = *Ficus planicostata Clintoni*.

**Ficus planicostata latifolia** Lx. = *Ficus latifolia*.

**Ficus populina** Heer. Fl. Tert. Helv., vol. ii, p. 66, pl. lxxxv, f. 1-7; lxxxvi, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 6, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Eocene?: Green River, Wyoming.

- Ficus præcursor** Lx. Fl. Dak. Gr., p. 81, pl. xlix, f. 5, 1892.  
Dakota group: Kansas.
- Ficus primordialis** Heer. Phyll. Crét. d. Nebr., p. 16, pl. iii, f. 1, 1866.  
Dakota group; Tekamah, Nebraska.
- Ficus proteoides** Lx. Fl. Dak. Gr., p. 77, pl. xii, f. 2, 1892.  
Dakota group: Kansas.
- Ficus protogæa?** Ett. Sitzb. Wien. Akad., vol. lv, p. 249, pl. ii, f. 5, 1867; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 51, pl. 175, f. 4, 1894.  
Cretaceous: Glen Cove, Long Island.
- Ficus pseudo-populus** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 204, pl. xxxiv, f. 1a, 2, 1878.  
Green River group: Unknown.  
Laramie group?: Evanston, Wyoming.
- Ficus reticulata** (Lx.) n. comb.  
Laurophyllum reticulatum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873]; Cret. Fl., p. 76, pl. xv, f. 4, 5, 1874.  
Ficus laurophyllum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 7, 1874 [1876]; Cret. and Tert. Fl., p. 49, pl. i, f. 12, 13, 1878; Fl. Dak. Gr., p. 85, 1892.  
Dakota group: Kansas.
- Ficus?** rhomboideus Lx. = Phyllites rhomboideus.
- Ficus rotundata** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 32, 33a, 1893 [1894].  
Upper Cretaceous: Vancouver Island.
- Ficus Schimper** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 417, pl. xviii, f. 1-3, 1869.  
Eolignitic: Mississippi.
- Ficus shastensis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 28, pl. xi, f. 3, 1888.  
Miocene: Shasta County, California.
- Ficus sinuosa** Ward. Bull. U. S. Geol. Surv., no. 37, p. 41, pl. xxii, f. 2, 1887.  
Laramie group: Black Buttes, Wyoming.
- Ficus?** **Smithsoniana** Lx. Tert. Fl., p. 200, pl. xxxii, f. 5, 1878.  
Juglans Smithsoniana Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 16, 1871 [1872].  
Laramie group: Raton Mountains, New Mexico; Mount Carbon, near Morrison, Colorado.
- Ficus sordida** Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 17, pl. iv, f. 6, 7, 1878.  
Miocene: Chalk Bluffs, California.
- Ficus speciosissima** Ward. Bull. U. S. Geol. Surv., no. 37, p. 39, pl. xxi, f. 3, 1887.  
Montana formation: Point of Rocks, Wyoming.

**Ficus spectabilis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 379, 1872 [1873]; Tert. Fl., p. 199, pl. xxxiii, f. 4-6, 1878.

Denver group: Golden, Colorado.

Eolignitic: Cross Lake and McLees, Louisiana.

**Ficus Sternbergii** Lx. Fl. Dak. Gr., p. 82, pl. 1, f. 1, 1892.

Dakota group: Kansas.

**Ficus Sternbergii** Lx. [1872]=*Persea Sternbergii*.

**Ficus subtruncata** Lx.=*Ficus auriculata*.

**Ficus tenuinervis** Lx. Cret. and Tert. Fl., p. 164 pl. xliv, f. 4, 1883.

Green River group: Alkali Station, Wyoming.

Eocene?: Cherry Creek, Oregon.

**Ficus tiliaefolia** (Al. Br.) Heer. Fl. Tert. Helv., vol. ii, p. 68, pl. lxxxiii, f. 3-12; lxxxiv, f. 1-6; lxxxv, f. 14, 1856; Lx., Tert. Fl., p. 203, 1878.

*Cordia?* *tiliaefolia* Al. Br. Leonh. and Brown, N. Jahrb., 1845, p. 170, 1845.

*Dombeyopsis tiliaefolia* (Al. Br.) Ung. Gen. et Sp. Pl. Foss., p. 447, 1850.

*Dombeyopsis aequifolia* Göpp. Lesquereux, Ann. Rept., op. cit., p. 10, 1871 [1872].

Miocene: California.

Fort Union group: Burns Ranch, Montana.

Denver group: Golden, Colorado.

Laramie group: Many localities.

**Ficus truncata?** Lx.=*Ficus auriculata*.

**Ficus ulmifolia** Lx.=*Ficus uncata*.

**Ficus uncata** Lx. Tert. Fl., p. 197, pl. xxxv, f. 1, 1a, 2, 1878.

*Ficus ulmifolia* Lx. Ann. Rept. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 14, 1871 [1872].

*Ficus arenacea* Lx., ex. p. Ann. Rept., loc. cit., p. 300, 1871 [1872].

*Ficus arenacea brevipetiolata* Lx. Tert. Fl., p. 195, pl. xxix, f. 2, 3, 5, 1878.

*Populus monodon* Lx. Tert. Fl., p. 180, pl. xxiv, f. 1, 1878.

*Ficus Gaudini* Lx. Ann. Rept., loc. cit., p. 300, 1871 [1872].

*Ficus Crossii* Ward. Bull. U. S. Geol. Surv., p. 39, pl. xxi, fig. 2, 1887.

Laramie group: Fishers Peak, New Mexico; Coal Creek, Colorado.

**Ficus ? undulata** Lx. Fl. Dak. Gr., p. 84, pl. xii, f. 5, 1892.

Dakota group: Kansas.

**Ficus Unger** Lx. Ann. Rept., U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 7, 1871 [1872]; Tert. Fl., p. 195, pl. xxx, f. 3, 1878; Cret. and Tert. Fl., p. 163, pl. xliv, f. 1-3, 1883.

Green River group: Green River?

**Ficus viburnifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 42, pl. xxii, f. 4-8, 1887.

Fort Union group: Clear Creek, Montana.

**Ficus virginianensis** Font. Potomac Fl., p. 295, pl. cxliii, f. 1, 3; cxliv, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Ficus wellingtoniae** Du. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 60, pl. ix, f. 33, 34, 1893 [1894].

Upper Cretaceous: Wellington Mine and Port McNeill, Vancouver Island.

**Ficus Willisiana** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 176, f. 2, 5, 1894.

Cretaceous: Glen Cove and Sea Cliff, Long Island.

**Ficus Woolsoni** Newby. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 33, pl. ii, f. 1, 2c, 1892; Newby., Fl. Amboy Clays, p. 70, pl. xx, f. 3; xxiii, f. 1-6, 1895 [1896].

Cretaceous: Staten Island.

Amboy clay: Woodbridge, Sayreville, New Jersey.

**Ficus wyomingiana** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 314, 1874 [1876]; Tert. Fl., p. 205, pl. xxxiv, f. 3, 1878.

Laramie group?: Evanston, Wyoming.

**Ficus zizyphoides** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874].

—— ? : Golden, Colorado.

**Ficus** ? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 27, 1890.

Eocene?: Similkameen Valley, British Columbia.

**Ficus** sp., Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Nanaimo, Vancouver Island.

**Ficus** sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

**Ficus** sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 141, 1897.

Laramie group ? : "Dutton Creek Coal," Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 141, 1897.

Laramie group ? : "Dutton Creek Coal," Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Laramie group ? : North Fork Dutton Creek, Wyoming.



**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Laramie group: Rock Springs, Wyoming.

**Ficus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

**FITTONIA** Carruthers. Trans. Linn. Soc. London, vol. xxvi, p. 680, 1868.

**FLABELLARIA** (comm.) L'Héritier. Stirp. Nov., p. 59, 1785.

*Flabellaria communis* Lx. = *Flabellaria eocenica*.

**Flabellaria eocenica** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]; Tert. Fl., p. 111, pl. xiii, f. 1-3, 1878.

*Sabal communis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

*Flabellaria communis* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876].

Laramie group: Black Buttes, Wyoming; Golden, Colorado.

**Flabellaria florissanti** Lx. Cret. and Tert. Fl., p. 144, pl. xxiv, f. 1-2a, 1883.

Green River group: Uinta County, formerly but wrongly called Randolph County, Wyoming.

**Flabellaria latania** Rossm. Verstein. Braunkohl. v. Altsattel, p. 39, pl. xi, f. 49, 1840; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]. [Not afterwards recognized by Lesquereux.]

—: Golden, Colorado.

*Flabellaria longirachis* Ung. Lx. 1873 = *Geonomites tenuirachis*.

**Flabellaria? minima** Lx. Cret. Fl., p. 56, pl. xxx, f. 12, 1874.

Dakota group: Western Kansas.

*Flabellaria Zinckeni* Heer Lx. 1872 = *Geonomites goldianus*.

**FONTAINEA** Newberry. Fl. Amboy Clays, p. 94, 1895 [1896.]

**Fontainea grandifolia** Newby. Fl. Amboy Clays, p. 96, pl. xlv, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**FONTINALIS** Linnaeus. Gen. Pl., p. 323, 1737.

**Fontinalis pristina** Lx. Cret. and Tert. Fl., p. 135, pl. xxi, f. 9, 1883.

Green River group: Florissant, Colorado.

**Fontinalis** sp., Dn. Can. Nat., vol. iii, new ser., p. 73, 1868.

Pleistocene: Greens Creek, Ottawa River, Canada.

**Fontinalis** sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

Fragment No. 1 Font. Potomac Fl., p. 190, 1889.

Potomac formation: Between Washington and Baltimore.

Fragment No. 2 Font. Potomac Fl. p. 192, 1889.

Potomac formation: Baltimore, Maryland.

**FRAXINUS** Tournefort ex Linnaeus. Syst., ed. i, 1735.

**Fraxinus abbreviata** Lx. Cret. and Tert. Fl., p. 170, pl. xxviii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

**Fraxinus affinis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Fraxinus Brownellii** Lx. Tert. Fl., p. 230, 1878.

Green River group: South Park, Colorado.

**Fraxinus denticulata** Heer. Fl. Foss. Arct., vol. i, p. 118, pl. xvi, f. 4, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]; Tert. Fl., p. 228, pl. xl, f. 1, 2, 1878.

Livingston beds: Bozeman coal field, Montana.

Laramie group?: Evanston, Wyoming?

**Fraxinus eocenica** Lx. Tert. Fl., p. 229, 1878; Cret. and Tert. Fl., p. 123, pl. xx, f. 1-3, 1883.

Denver beds: Golden, Colorado.

**Fraxinus Heerii** Lx. Cret. and Tert. Fl., p. 169, pl. xxxiii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

**Fraxinus herendeenensis** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 224, pl. ix, f. 7, 1894.

Eocene?: Herendeen Bay, Alaska.

**Fraxinus intigrifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Fraxinus Libbeyi** Lx. Cret and Tert. Fl., p. 171, pl. xxvii, f. 5-7, 9, 1883.

Green River group: Florissant, Colorado.

**Fraxinus mespilifolia** Lx. Cret and Tert. Fl., p. 169, pl. xxxiii, f. 7-12, 1883.

Green River group: Florissant, Colorado.

**Fraxinus ? myricæfolia** Lx. Cret and Tert. Fl., p. 170, pl. xxxiii, f. 13, 14, 1883.

Green River group: Florissant, Colorado.

**Fraxinus prædicta** Heer. Fl. Tert. Helv., vol. iii, p. 22, pl. civ, f. 12, 13, 1859; Lx., Ann. Rept., op. cit., p. 414, 1873 [1874]; Tert. Fl., p. 229, pl. xl, f. 3, 1878.

Denver beds: Golden, Colorado.

Green River group: Near Florissant, Colorado.

**Fraxinus quadrangulata** Michx. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895.

Interglacial: Don Valley, Canada.

**Fraxinus Ungerii** Lx. Cret. and Tert. Fl., p. 171, 1883.

Green River group: Florissant, Colorado.

**Fraxinus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek Coal," Wyoming.

**FRENELITES** Endlicher. Synop. Conif., p. 273, 1847.

**Frenelites Reichii** Ett. Hollick, Trans. N.Y. Acad. Sci., vol. xii, p. 29, pl. i, f. 23, 1892.

Cretaceous: Kreischerville, Staten Island; Marthas Vineyard.

**FRENELOPSIS** Schenk. Palæontographica, vol. xix, p. 13, 1869.

**Frenelopsis gracilis** Newby. Fl. Amboy Clays, p. 59, pl. xii, f. 1-3a, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Frenelopsis Hoheneggeri** (Ett.) Schenk? Palæontographica, vol. xix, heft i, p. 13, pl. iv, f. 5-7; v, f. 1, 2; vi, f. 1-6; vii, f. 1, 1869; Newby., Fl. Amboy Clays, p. 58, pl. xii, f. 4, 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Trinity division: Glenrose, Texas.

**Frenelopsis parceramosa** Font. Potomac Fl., p. 218, pl. cxi, f. 1-5; cxii, f. 1-5; clxviii, f. 1, 1889.

Potomac formation: Trents Reach, Virginia.

**Frenelopsis ramosissima** Font. Potomac Fl., p. 215, pl. xcv-xcix; c, f. 1-3; ci, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

**Frenelopsis varians** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 273, pl. xl, f. 1, 2; pl. xli, f. 1-3a, 1893.

Trinity division: Glenrose, Texas.

**Fruit capsules** sp., Font. Potomac Fl., p. 272, pl. cxxxv, f. 14, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**FUCUS** (Tournefort) Linnæus. Gen. Pl., p. 326, 1737.

**Fucus lignitum** Lx. Bull. U. S. Geol. and Geog. Surv. Terr., vol. i, p. 364, 1875 [1876]; Tert. Fl., p. 42, pl. lxi, f. 24, 24a, 1878.

Montana formation: Point of Rocks, Wyoming.

Fort Union group: Burns Ranch, Montana.

**Fucus digitatus** Penhallow. Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 71, 1896.

Fucus sp., Penhallow. Bull. Geol. Soc. Am., vol. i, p. 332, 1890.

Pleistocene: Greens Creek and Besserer wharf, Ottawa River.

Fucus sp., Penhallow = Fucus digitatus.

**GALLA** Ludwig. Palæontogr., vol. v, p. 108, 1857.

**Galla quercina** Lx. Fl. Dak. Gr., p. 58, pl. vii, f. 2, 1892.

Dakota group: Kansas.

**GAYLUSSACCIA** Humbolt, Bonpland, and Kunth. Nov. Gen. et Sp., vol. iii, p. 275, 1818.

**Gaylussaccia resinosa** T. and G. Dn., Can. Nat., vol. iii, new ser., p. 71, f. (in text.) 1, 1868; Geol. Hist. Pl., p. 228, f. 77, 1888.

Pleistocene: Greens Creek, Ottawa River, Canada.

**GEINITZIA** Endlicher. Synops. Conif., p. 280, 1847.

**Geinitzia formosa** Heer. Neue Denkschr. Schweiz. Ges., vol. xxiv, p. 6, pl. i, f. 9, pl. ii, 1871; Newby., Fl. Amboy Clays, p. 51, pl. ix, f. 9, 1895 [1896].

Amboy clay: New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Geinitzia** sp., Newby. Proc. Lyc. Nat. Hist. N. Y., 2d ser., Jan. 3 to Mar. 3, 1873, p. 10, 1873.

Cretaceous: Keyport, New Jersey.

**Geinitzia** Heer, species? Lx., Cret. Fl., p. 54, 1874.

Dakota group: Sioux City, Iowa.

**GEONOMITES** Visiani. Mem. dell' Istituto Veneto (Palmae Pinatae Tertiariae) 1864, p. 456, 1864.

**Geonomites goldianus** Lx. Tert. Fl., p. 115, pl. iv, f. 9, 1878.

*Palmacites goldianus* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876].

*Flabellaria Zinckeni* Heer. Lesquereux, Ann. Rept., op. cit., p. 377, 1872 [1873]; Tert. Fl., p. 110, pl. ix, f. 6-8, 1878.

Denver group?: Golden, Colorado.

Green River group?: Barrell Springs, Wyoming.

**Geonomites graminifolius** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

**Geonomites Schimper** Lx. Tert. Fl., p. 116, pl. x, f. 1, 1878.

Laramie group?: Yellowstone National Park.

Miocene?: Contra Costa, California.

**Geonomites tenuirachis** Lx. Tert. Fl., p. 117, pl. xi, f. 1, 1878.

*Flabellaria longirhachis*? Ung. Gen. et. Sp. Pl. Foss., p. 332, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874].

Laramie group: Raton Mountains, New Mexico.

**Geonomites Unger** Lx. Tert. Fl., p. 118, pl. xi, f. 2, 1878.

Laramie group: Raton Mountains, New Mexico.

**GINKGO** Linnæus. Mant., ii, p. 313, 1771.

**Ginkgo adiantoides** (Ung.) Heer. Fl. Foss. Aret., vol. v, abt. iii, p. 21 pl. ii, f. 7-10, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 15, pl. i, f. 5, 6, 1887.

*Salisburia adiantoides* Ung. Synop. Pl. Foss., p. 211, 1845.

Livingston beds: Bozeman coal field, Montana.

Fort Union group: Seven-Mile Creek, Montana; Similkameen River, British Columbia.

**Ginkgo baynesiana** (Dn.) n. comb.

*Salisburia baynesiana* Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, pl. v, f. 21, 21a, 1882 [1883].

Upper Cretaceous: Baynes Sound and Beaver Harbor, Vancouver Island.

**Ginkgo? binervata** (Lx.) n. comb.

*Salisburia binervata* Lx. Trans. Am. Phil. Soc., vol. xiii, p. 412, pl. xv, f. 3-6, 1869.

Eolignitic: Mississippi.

**Ginkgo laramiensis** Ward. Science, vol. v, p. 496, f. 7, 1885; Bull. U. S. Geol. Surv., no. 37, p. 15, pl. i, f. 4, 1887.

Montana formation: Point of Rocks, Wyoming.

**Ginkgo lepida** Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 62, pl. xii; vii, f. 7, 1876.

Salisburia (*Ginkgo*) *lepida* Heer. Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 2, 1885 [1886].

Kootanie: Martin and Coal Creek, British Columbia.

**Ginkgo nana** (Dn.) n. comb.

Salisburia (*Ginkgo*) *nana* Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 3, 1885 [1886].

Kootanie: Coal Creek, British Columbia.

**Ginkgo pusilla** (Dn.) n. comb.

Salisburia *pusilla* Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 11-13, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

**Ginkgo sibirica** Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 61, pl. vii, f. 6; ix, f. 5f; xi, 1876.

Salisburia (*Ginkgo*) *sibirica* Heer. Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 8, pl. ii, f. 1, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

**Ginkgo** sp.

*Carpites myricarum* Lx. Tert. Fl., p. 303, pl. ix, f. 8-11, 1878.

Laramie group: Black Buttes, Wyoming.

**Ginkgo** sp. (Dn.) n. comb.

Salisburia sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 18, 1885 [1886].

Canadian Upper Laramie: Near Calgary, Canada.

**Ginkgo** sp.

Salisburia, nuts of, Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 4, 1885 [1886].

Kootanie: Kootanie series, British Columbia (no locality).

**Ginkgo** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: South Saskatchewan; West of Medicine Hat.

**Ginkgo** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Canadian Upper Laramie: Souris River, Mackenzie River.

**GLEDITSCHIA** Clayton, ex Linnaeus. Gen., ed. ii, p. 480, 1742.

**Gleditschia triacanthos** L. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

**GLEICHENIA** Smith. Mem. Ac. Turin, vol. v, p. 418, 1791.

**Gleichenia Gieseckiana** ? Heer. Fl. Foss. Arct., vol. i, p. 78, pl. xliii, f. 1a, 2a, 3a, 1868; Fl. Amboy Clays, p. 36, pl. iv, f. 12, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Gleichenia gracilis** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 52, pl. x, f. 1-11, 1874; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 11, pl. iii, f. 4, 1885 [1886].

Mill Creek series: Mill Creek.

**Gleichenia Kurriana** Heer. *Neue Denkschr. Schw. Ges.*, vol. xxiii, p. 6, pl. ii, f. 1-4, 1869; *Lx.*, *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 421, 1872 [1873].

Mill Creek series: Mill Creek.

Dakota group: Fort Harker, Kansas.

**Gleichenia micromera** Heer? *Fl. Foss. Arct.*, vol. iii, abt. ii, p. 55, pl. x, f. 14, 15, 1874; *Fl. Amboy Clays*, p. 36, pl. iii, f. 6, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Gleichenia Nordenskiöldi** ? Heer. *Fl. Foss. Arct.*, vol. iii, abt. ii, p. 50, pl. ix, f. 6-12, 1874; *Font.*, *Potomac Fl.*, p. 119, pl. xxi, f. 11, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

Dakota group: Kansas.

**Gleichenia Zippei** Heer? *Fl. Foss. Arct.*, vol. i, p. 79, pl. xlviii, f. 4, 1868; *Fl. Amboy Clays*, p. 37, pl. iii, f. 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**GLOSSOZAMITES** Schimper. *Pal. Vég.*, vol. ii, p. 163, 1870.

**Glossozamites distans** Font. *Potomac Fl.*, p. 176, pl. lxxviii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Glossozamites Klipsteini** (Dunk.) Font. In *Diller and Stanton*, *Bull. Geol. Soc. Am.*, vol. v, p. 450, 1894.

*Cyclopteris Klipsteini* Dunk. *Monogr. d. Nordd. Wealdenb.*, p. 11, pl. ix, f. 7, 1846.

Horsetown beds: Tehama and Shasta counties, California.

**GLYPTOSTROBUS** Endlicher. *Synop. Conif.*, p. 69, 1847.

**Glyptostrobus brookense** (Font.) Ward. 15th *Ann. Rept. U. S. Geol. Surv.*, p. 359, 1895.

*Taxodium* (*Glyptostrobus*) *brookense* Font. *Potomac Fl.*, p. 254, pl. cxxii, f. 1; cxxiv, f. 3-9; cxxxi, f. 5; clxv, f. 1-3; clxvi, f. 4, 7; clxvii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

**Glyptostrobus brookense angustifolium** (Font.) n. comb.

*Taxodium* (*Glyptostrobus*) *brookense angustifolium* Font. *Potomac Fl.*, p. 256, pl. clxvii, f. 1, 1889.

Potomac formation: White House Bluff.

**Glyptostrobus europæus** (Brongn.) Heer. *Fl. Tert. Helv.*, vol. i, p. 51, pl. xix; xx, 1855; *Lx.*, *Tert. Fl.*, p. 74, pl. vii, f. 1, 2, 1878.

*Taxodium europæum* Brongn. *Ann. d. Sci. Nat.*, vol. xxx, p. 168, 1833.

*Taxodites europæus* (Brongn.) Endl. *Synop. Conif.*, p. 278, 1847.

Miocene?: Birch Bay, British Columbia.

Eocene?: Alaska.

Green River group: Florissant, Colorado.

Fort Union group: Mouth of Yellowstone, Montana.

**Glyptostrobus europæus Unger** Heer. *Fl. Tert. Helv.*, vol. iii, p. 159, 1859; *Lx.*, *Cret. and Tert. Fl.*, p. 222, pl. xli, f. 1-1c, 1883.

*Glyptostrobus Unger* Heer. *Fl. Tert. Helv.*, vol. i, p. 52, 1855.

Eocene?: Alaska.

Fort Union group: Bad Lands, Dakota; Porcupine Creek.

**Glyptostrobus fastigiatus** (Font.) Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 380, 1895.

*Taxodium* (*Glyptostrobus*) *fastigiatum* Font. Potomac Fl., p. 253, pl. cxxv, f. 1, 3, 1889.

Potomac formation: Near Brooke, near Potomac Run, Virginia.

*Glyptostrobus gracillemus* Lx. = *Sequoia gracillima*.

**Glyptostrobus grœnlandicus** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 76, pl. xvii, f. 9, xx, f. 9, 10, xxii, f. 12, 1874; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv., p. 9, pl. iii, f. 8, 1885 [1883].

Kootanie: North Branch Old Man River, British Columbia.

**Glyptostrobus Unger** Heer.\* Fl. Tert., Helv., vol. i, p. 52, 1855; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 70, 1889 [1890]; Lx., Cret. and Tert. Fl., p. 139, pl. xxii, f. 1-6a, 1883. [\*This is probably the same as that referred above to *G. europæus Unger*. It is left in this unsatisfactory manner until the subject can be thoroughly revised with abundant material at hand for determining the exact status. F. H. K.]

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene?: Mackenzie River.

*Glyptostrobus Unger* Heer = *G. europæus Unger*?

**Glyptostrobus** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

**Glyptostrobus** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 79, f. (in text) 7, 1890.

Miocene?: Similkameen River and Stump Lake, British Columbia.

*Goniopteris polypodioides* Ett. = *Dryopteris polypodioides*.

**Goniopteris pulchella**? Heer.\* Lesquereux, Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]. [\*Not afterwards referred to by Lesquereux; included in some other species, but no record remains of transfer.]

Laramie group?: Golden, Colorado.

**GREWIA** Linnæus. Syst., ed. i, 1735.

**Grewia auriculata** Lx. Cret. and Tert. Fl., p. 252, pl. lv, f. 1, 1883.

Miocene: Bridge Creek, Oregon.

? **Grewia celastroides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 86, pl. xxxix, f. 2, 1887.

Fort Union group: Iron Bluff, Montana.

**Grewia crenata** (Ung.) Heer. Fl. Tert. Helv., vol. iii, p. 42, pl. cix, f. 12-21; ex, f. 1-11, 1859; Ward, Bull. U. S. Geol. Surv., no. 37, p. 85, pl. xxxix, f. 1, 1887.

*Dombeyopsis crenata* Ung. Gen. et Sp. Pl. Foss., p. 448, 1850.

Fort Union group?: Bull Mountains, Montana.

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**Grewia obovata** Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 86, pl. xix, f. 15, 15b, 1876; Ward, Bull. U. S. Geol. Surv., no. 37, p. 88, pl. xxxix, f. 6, 7, 1887.

Fort Union group: Seven-Mile Creek, Montana.

? **Grewia Pealei** Ward. Bull. U. S. Geol. Surv., no. 37, p. 87, pl. xxxix, f. 3-5, 1887.

Fort Union group?: Bull. Mountains, Montana.

**GREWIOPSIS** Saporta. Études, ii, p. 45, 1866.

**Grewiopsis acuminata** Lx. Proc. U. S. Nat. Mus., vol. x, p. 44, pl. iii, f. 12, 13; iv, f. 1, 2, 1887.

Laramie group?: Unknown.

**Grewiopsis æquidentata** L. Fl. Dak. Gr., p. 180, pl. lviii, f. 4, 1892.  
Dakota group: Kansas.

**Gre(v)wiopsis Cleburni** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 380, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 306, 1874 [1876]; Tert. Fl., p. 259, pl. lxii, f. 12, 1878.

Laramie group: Hodges Pass, Wyoming.

Montana formation: Point of Rocks.

**Grewiopsis eocenica** (Lx.) n. comb.

*Grewiopsis Saportanea* Lx. Tert. Fl., p. 257, pl. i, f. 10-12, 1878.

*Aleurites eocenica* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873].

Laramie group: Black Buttes, Wyoming.

**Grewiopsis ficifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 92, pl. xli, f. 1, 2, 1887.

Laramie group, Black Buttes, Wyoming.

**Grewiopsis flabellata** (Lx.) n. comb.

*Populites flabellata* Lx. Am. Journ. Sci., vol. xlv, p. 94, 1868.

*Populites fagifolia* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 422, 1872 [1873].

*Greviopsis Haydenii* Lx. Cret. Fl., p. 97, pl. iii, f. 2, 4; pl. xxiv, f. 3, 1874.

Dakota group: Fort Harker, Kansas.

*Greviopsis Haydenii* Lx. = *Grewiopsis flabellata*.

**Grewiopsis Mudgei** Lx. Fl. Dak. Gr., p. 181, pl. lxvi, f. 3, 1892.

Dakota group: Kansas.

**Grewiopsis paliurifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 92, pl. xli, f. 3, 1887.

Laramie group: Black Buttes, Wyoming.

**Grewiopsis platanifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 89, pl. xl, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Grewiopsis populifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 90, pl. xl, f. 3-5, 1887.

Fort Union group: Burns's Rancho, Montana.

*Grewiopsis Saportanea* Lx. = *Grewiopsis eocenica*.

**Grewiopsis tenuifolia** Lx. Tert. Fl., p. 258, pl. xl, f. 14, 1878.

Denver group: Golden, Colorado.



**Grewiopsis viburnifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 89, pl. xl, f. 2, 1887; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 59, pl. 174, f. 8, 1894.

Fort Union group: Burns's Rancho, Montana.

Cretaceous: Lloyds Neck, Long Island.

**Grewiopsis Walcottii** Lx. Proc. U. S. Nat. Mus., vol. x, p. 45, pl. iv, f. 3, 4, 1887.

—: Upper Kanab Valley, Utah.

**GYMNOGRAMMA** Desv. Berl. Mag. V., p. 304, 1811.

**Gymnogramma Gardneri** Lx. Tert. Fl., p. 58, pl. iv, f. 2, 1878.

*Pteris Gardneri* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874].

Laramie group?: Sand Creek, Colorado.

**Gymnogramma Haydenii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 59, pl. v, f. 1-3, 1878.

Laramie group?: Yellowstone National Park, Wyoming.

**Gymnospermous fruits** Font. Potomac Fl., p. 262, 1889.

**HALYMENTITES** Sternberg. Versuch., vol. ii, Fasc. v and vi, p. 29, 1833.

**Halymenites major** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 38, pl. i, f. 7, 8, 1878.

*Halymenites minor* F. O. Ann. Rept., op. cit., p. 373, 1872 [1873]; Tert. Fl., p. 39, pl. i, f. 9, 1878.

Widely distributed from the Montana formation to the Eocene.

*Halymenite minor* F. O. Lx. = *Halymenites major* Lx.

**Halymenites striatus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 37, pl. i, f. 6, 1878.

Laramie group: Raton Mountains, New Mexico.

**HAMAMELITES** Saporta. Études, II: Ann. d. Sci. Nat., 5th ser., Bot., vol. iii, p. 47 [43], 1865.

**Hamamelites? cordatus** Lx. Cret. and Tert. Fl., p. 71, pl. iv, f. 3, 1883.

Dakota group: Fort Harker, Kansas.

**Hamamelites fothergilloides** Sap. Études, II: Ann. Sci. Nat., Bot., 5th ser., vol. iii, p. 47, 1865; Ward, Bull. U. S. Geol. Surv., no. 37, p. 64, pl. xxix, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

*Hamamelites kansaseana* Lx. = *Quercus kanseana*.

**Hamamelites quadrangularis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, 1874 [1876]; Cret. and Tert., Fl., p. 70, 1883.

*Alnites quadrangularis* Lx. Cret. Fl., p. 62, pl. iv, f. 1, 1874.

*Populites quadrangularis* Lx. Am. Journ. Sci., vol. xlv, p. 94, 1868.

Dakota group: Kansas?

**Hamamelites quercifolius** Lx. Cret. and Tert. Fl., p. 71, 1883.

Dakota group: Kansas.

**Hamamelites tenuinervis** Lx. Cret. and Tert. Fl., p. 70, 1883.

Dakota group: Kansas.

**HAUSMANNIA** F. Mueller. Fragm. Phyt. Austral., vol. iv, p. 148, 1864.

**Hausmannia rigida** Newby. Fl. Amboy Clays, p. 35, pl. i, f. 2, 3, 5, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

**HEDERA** Tournefort ex. Linnæus. Gen., ed. i, p. 56, 1737.

*Hedera aquamara* Ward = *Quercus aquamara*.

**Hedera auriculata** Heer. Fl. Foss. Alask., p. 36, pl. ix, f. 6, 1869.

Eocene?: Port Graham, Alaska.

**Hedera Bruneri** Ward. Bull. U. S. Geol. Surv., no. 37, p. 58, pl. xxvi, f. 6, 1887.

Laramie group: Black Buttes, Wyoming.

**Hedera cretacea** Lx. Fl. Dak. Gr., p. 127, pl. xviii, f. 1, 1892.

Dakota group: Kansas.

**Hedera decurrens** Lx. Fl. Dak. Gr., p. 130, pl. xviii, f. 6, 1892.

Dakota group: Kansas.

**Hedera MacClurii** Heer. Fl. Foss. Arct., vol. i, p. 119 pl. xvii, f. 1a, 2a, 3, 4, 5a; p. 138; pl. xxi, f. 17a, 1868.

Miocene?: Mackenzie River.

**Hedera marginata** Lx. Cret. and Tert. Fl., p. 177, pl. xl, f. 8, 1883.

Green River group: Florissant, Colorado.

**Hedera microphylla** Lx. Fl. Dak. Gr., p. 127, pl. xviii, f. 2, 3, 1892.

Dakota group: Kansas.

**Hedera minima** Ward. Bull. U. S. Geol. Surv., no. 37, p. 57, pl. xxvi, f. 5, 1887.

Fort Union group: Clear Creek, Montana.

**Hedera obliqua** Newby. Fl. Amboy Clays, p. 113, pl. xxxvii, f. 8; xxxviii, f. 5, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Hedera orbiculata** (Heer) Lx. Fl. Dak. Gr., p. 129, pl. xvii, f. 12-14, 1892.

*Chondrophyllum orbiculatum* Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 115, pl. xxxi, f. 3c, 1874.

Dakota group: Kansas.

**Hedera ovalis** Lx. Cret. Fl., p. 91, pl. xxv, f. 3; pl. xxvi, f. 4, 1874.

*Chondrophyllum Nordenskiöldi*? Heer. In Lx., Fl. Dak. Gr., p. 129.

Dakota group: Nebraska and Kansas.

Mill Creek series: Mill Creek.

**Hedera parvula** Ward. Bull. U. S. Geol. Surv., no. 37, p. 57, pl. xxvi, f. 4, 1887.

Fort Union group: Clear Creek, Montana.

**Hedera platanoidea** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 351, pl. iii, f. 3, 1874 [1876]; Fl. Dak. Gr., p. 128, 1892.

Dakota group: Fort Harker, Kansas.

**Hedera primordialis** Sap. Le Monde des Pl., p. 200, f. 29, 1879; Newby., Fl. Amboy Clays, p. 113, pl. xix, f. 1, 9; xxxvii, f. 1-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Hedera Schimper** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 395, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 351, pl. vii, f. 5, 1874 [1876]; Cret. and Tert. Fl., p. 65, pl. iv, f. 7, 1883.

Dakota group: Fort Harker, Kansas.

**HEDERÆPHYLLUM** Fontaine. Potomac Fl., p. 323, 1889.

**Hederæphyllum angulatum** Font. Potomac Fl., p. 324, pl. clxii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

**Hederæphyllum crenulatum** Font. Potomac Fl., p. 324, pl. clxii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

**Hemitelites Tcrelli** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 462, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 5, 1871 [1872]. [This specimen was not afterwards referred to by Lesquereux.]

Eocene?: Green River, Wyoming.

*Hemitelites Torelli* Heer = *Osmunda Doroschkiana*.

**HICORIA** Rafinesque. Med. Rep. (II), vol. 5, p. 352, 1808.

**Hicoria antiquorum** (Newby.) n. comb.

*Carya antiquorum* Newby. Later Extinct Floras, p. 72, 1868; Lx., Tert. Fl., p. 289, pl. lvii, f. 1-5; pl. lviii, f. 2, 1878.

Fort Union group: Yellowstone Valley, Montana.

Denver group?: Carbon and Evanston, Wyoming; ? Cross Lake, Louisiana.

Upper Laramie group?: Porcupine Creek and Rocky Mountain House, Northwest Territory.

**Hicoria Bruckmanni** (Heer) n. comb.

*Carya Bruckmanni*? Heer. Fl. Tert. Helv., vol. iii, p. 93, pl. cxxvii, f. 52, 1859; Lx., Cret. and Tert. Fl., p. 191, pl. xxxix, f. 6, 1883.

Green River group: Florissant, Colorado.

**Hicoria elænoides** (Ung.) n. comb.

*Carya elænoides* (Ung.) Heer. Fl. Tert. Helv., vol. iii, p. 92, pl. cxxxi, f. 1-4, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 18, 1888.

Miocene: John Day Valley, Oregon.

**Hicoria juglandiformis** (Sternb.) n. comb.

*Carya bilinica* (Ung.) Ett. Abhandl. k. k. geol. Reichs., vol. i, p. 12, pl. ii, f. 17, 1852; Lesquereux, Cret. and Tert. Fl., p. 191, pl. xxxix, f. 1, 2, 13, 1883.

*Juglans bilinica* Ung. Gen. et Sp. Pl. Foss., p. 469, 1850.

Phyllites *juglandiformis* Sternb. Vers. 4. Index, Ic., pl. xxxv, f. 1, 1825.

Green River group: Florissant, Colorado.

Miocene: Spanish Peak and Shasta County, California.

**Hicoria pecan** (Marsh) Britton. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

*Carya olivæformis* Nutt. Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Miocene?: Bridgeton, New Jersey.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

**Hicoria rostrata** (Göpp.) n. comb.

*Carya rostrata* (Göpp.) Schimp. Pal. Vég., vol. iii, p. 257, 1874; Lx., Cret. and Tert. Fl., p. 191, pl. xxxix, f. 4, 1883.

*Juglans rostrata* Göpp. Palæontogr., vol. viii, p. 136, pl. lv, 1861.

Green River group: Florissant, Colorado.

**Hicoria vermontana** (Lx.) n. comb.

*Carya vermontana* Lx. Am. Journ. Sci., vol. xxxv, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 130, 1861.

——: Brandon, Vermont.

**Hicoria verrucosa** (Lx.) n. comb.

*Carya verrucosa* Lx. Am. Journ. Sci., vol. xxxii, p. 357, 1861; Geol. Vt., vol. ii, p. 714, f. 129, 1861.

——: Brandon, Vermont.

**Hicoria** (Dn. sp.).

*Carya* sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Fort Pierre series: Head of Swift Current.

**HYMENÆA** Linnaeus. Gen. Pl., p. 366, 1737.

**Hymenæa dakotana** Lx. Fl. Dak. Gr., p. 145, pl. lv, f. 2, 3; pl. lvi, f. 1, 2; pl. lxii, f. 2, 1892.

Dakota group: Kansas.

Amboy clay: New Jersey.

Cretaceous: Sea Cliff, ? Long Island.

**Hymenæa virginensis** Font. Potomac Fl., p. 320, pl. clxiii, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

**HYMENOPHYLLUM** Smith. In Römer, Arch. I, 2, p. 56, 1797.

**Hymenophyllum confusum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874]; Tert. Fl., p. 51, pl. ii, f. 6-6a, 1878.

Denver group: Golden, Colorado.

**Hymenophyllum cretaceum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 421, 1872 [1873].

Dakota group: Fort Harker, Kansas.

**HYPNUM** Linnaeus. Gen. Pl., p. 323, 1737.

**Hypnum columbianum** Penhallow. In Dn., Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 77, f. 3, 1890.

Miocene?: Quensel, Similkameen Valley, British Columbia.

**Hypnum commutatum** Hedw. Hinde, Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**Hypnum fluitans** L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 71, 1896.

Pleistocene: Besserer's wharf, Ottawa River.

**Hypnum Haydenii** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 44, pl. v, f. 14-14b, 1878.

Green River group: South Park, Colorado.

**Hypnum recurvans** Schw. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 71, 1896.

Pleistocene: Long Portage, Missinaibi River, Ontario.

**Hypnum revolvens** Swartz. Hinde, Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**Hypnum** sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**ILEX** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Ilex? affinis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872]; Tert. Fl., p. 270, pl. l, f. 2, 3, 1878.

Green River group: Green River Station, Wyoming.

**Ilex armata** Lx. Fl. Dak. Gr., p. 176, pl. xxix, f. 8, 1892.

Dakota group: Kansas.

**Ilex borealis** Heer. Fl. Foss. Arct., vol. vii, p. 39, pl. lxiv, f. 3, 4, 1883; Lx., Fl. Dak. Gr., p. 176, pl. xxxv, f. 8, 1892.

Dakota group: Kansas.

**Ilex Cassine** L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Ilex dakotensis** Lx. Fl. Dak. Gr., p. 178, pl. xxix, f. 11, 1892.

Dakota group: Kansas.

**Ilex dissimilis** Lx. Tert. Fl., p. 271, pl. l, f. 7-9, 1878.

*Quercus ilicoides?* Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 291, 1871 [1872].

Green River group?: Sage Creek, Montana.

**Ilex? elongata** Newby. Fl. Amboy Clays, p. 98, pl. xviii, f. 1, 5, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Ilex grandifolia** Lx. Cret. and Tert. Fl., p. 187, pl. xxxviii, f. 1, 1883.

Green River group: Florissant, Colorado.

**Ilex insignis** Heer. Fl. Foss. Alask., p. 37, pl. x, f. 1, 1869.

Eocene?: Port Graham, Alaska.

**Ilex integrifolia** (Hill) Chapm.

*Prinos integrifolia* Ell. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

**Ilex Knightiaefolia** Lx. Cret. and Tert. Fl., p. 188, pl. xl, f. 4, 5, 1883.

Green River group: Florissant, Colorado.

**Ilex? longifolia** Heer. In Sismonda, Prod. Fl. Tert. Piémont, Mem.

Acad. Sci. Turin, sec. ii, vol. xviii, p. — [reprint 29], pl. iii, f. 8, 1859;

Lx., Proc. U. S. Nat. Mus., vol. xi, p. 21, 1888.

Eocene: Cherry Creek, Oregon.

**Ilex maculata** Lx. Cret. and Tert. Fl., p. 186, pl. xlv, f. 5, 1883.

Green River group: Alkali Station, Wyoming.

**Ilex Masoni** Lx. Fl. Dak. Gr., p. 179, pl. vii, f. 6; lxiii f. 6, 1892.

Dakota group: Kansas.

**Ilex microphylla** Newby. Proc. U. S. Nat. Mus., vol. v, p. 510, 1882 [1883].

Fort Union group: Fort Union, Dakota.

**Ilex microphylla** Lx. Cret. and Tert. Fl., p. 186, 1883.

Green River group: Florissant, Colorado.

**Ilex opaca** Ait. Hollick, Bull. Torr. Bot. Club, xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Ilex? ovata** Newby. Fl. Amboy Clays, p. 98, pl. xviii, f. 2, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Ilex papillosa** Lx. Fl. Dak. Gr., p. 177, pl. xxix, f. 9, 10; pl. lviii, f. 3, 1892.

Dakota group: Kansas.

**Ilex prunifolia** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 27, pl. ix, f. 7, 1878.

Miocene: Table Mountain, California.

**Ilex pseudo-stenophylla** Lx. Cret. and Tert. Fl., p. 185, 1883.

*Ilex stenophylla* Ung. Chlor. Prot., p. 149, pl. 1, f. 10-13, 1847; Lx., Ann.

Rept. U. S. Geol. and Geogr. Surv. Terr., suppl., p. 8, 1871 [1872].

Green River group: Florissant, Colorado.

**Ilex quercifolia** Lx. Cret. and Tert. Fl., p. 186, pl. xxxviii, f. 2-5, 1883.

Green River group: Florissant, Colorado.

**Ilex Scudderi** Lx. Fl. Dak. Gr., p. 178, pl. lviii, f. 2, 1892.

Dakota group: Kansas.

**Ilex sphenophylla?** Heer. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]. [Apparently not afterwards mentioned.]

Green River group?: Florissant, Colorado.

*Ilex stenophylla* Ung. Lesquereux=*Ilex pseudo-stenophylla*.

**Ilex strangulata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 399, 1875 [1896]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 359, pl. viii, f. 3, 1874 [1876]; Cret. and Tert. Fl., p. 84, pl. iii, f. 7, 1883.

Dakota group?: Southwestern Colorado.

**Ilex subdenticulata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874]; Tert. Fl., p. 271, pl. 1, f. 5, 6, 6a, 6b, 1878.

Green River group: Florissant, Colorado.

**Ilex undulata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874].

———?: Unknown.

**Ilex wyomingiana** Lx. Tert. Fl., p. 270, pl. 1, f. 1, 1878.

Green River group: Green River Station, Wyoming.

**ILLICICIUM** L. Syst., ed. x, p. 1050, 1759.

**Illicium lignitum** Lx. Am. Journ. Sci., vol. xxxii, p. 360, 1861; Geol. Vt., vol. ii, p. 716, f. 149, 1861.

———: Brandon Vermont.

**INGA** Scopoli. Introd., 298, 1777.

**Inga cretacea** Lx. Fl. Dak. Gr., p. 153, pl. lv, f. 11, 1892.

Dakota group: Kansas.

**INOLEPIS** Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 72, 1874.

**Inolepis?** sp., Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 337, pl. iv, f. 8, 1874 [1876].

Dakota group: Kansas.

**ISCETES** Linnæus. Amœn. Acad., iii, 1751.

**Iscetes brevifolius** Lx. Cret. and Tert. Fl., p. 136, 1883.

Green River group: Florissant, Colorado.

**IOXYLON** Rafinesque. Am. Mo. Mag., vol. iv, p. 195, 1818.

**Ioxylon pomiferum** Raf. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Maclura aurantiaca Nutt. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, p. 69, 1896.

Miocene?: Bridgeton, New Jersey.

Pleistocene: Don Valley, Toronto.

**JUGLANDIPHYLLUM** Fontaine. Potomac Fl., p. 315, 1889.

**Juglandiphyllum integrifolium** Font. Potomac Fl., p. 315, pl. clvii, f. 3, 5, 6, 1889.

Potomac formation: Deep Bottom, White House Bluff, Virginia.

**JUGLANDITES** Sternberg. Vers., vol. i, p. xl, 1825.

**Juglandites cretacea** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River, Canada.

**Juglandites ellsworthianus** Lx. Fl. Dak. Gr., p. 70, pl. xxxvii, f. i, 1892.

Dakota group: Kansas.

**Juglandites fallax** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 59, pl. xi, f. 48, 1893 [1894].

Upper Cretaceous: Vancouver Colliery, Vancouver Island.

**Juglandites Lacoei** Lx. Fl. Dak. Gr., p. 71, pl. xlviii, f. 5, 1892.

Dakota group: Kansas.

**Juglandites primordialis** Lx. Fl. Dak. Gr., p. 70, pl. xxxv, f. 15, 1892.

Dakota group: Kansas.

**Juglandites sinuatus** Lx. Fl. Dak. Gr., p. 71, pl. xxxv, f. 9-11, 1892.

Dakota group: Kansas.

**Juglandites?** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv. p. 59, pl. x, f. 43; pl. xiii, f. 56, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**JUGLANS** Linnæus. Gen., ed. i, p. 291, 1737.

**Juglans acuminata** Al. Br. Neues Jahrb. 1845, p. 170, 1845.

Eocene?: Port Graham, Alaska.

**Juglans alkalina** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 288, pl. lxii, f. 6-9, 1878.

Green River group?: Alkali Station, Wyoming.

**Juglans appressa** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xx, f. 6, 1869; Ann. Rept., op. cit., p. 294, 1871 [1872].

Eolignitic: Mississippi.

**Juglans arctica** Heer. Fl. Foss. Arct., vol. 6, abt. ii, p. 71, pl. xl, f. 2, 1882; in Lx., Fl. Dak. Gr., p. 68, pl. xix, f. 3; pl. xxxix, f. 5, 1892.

Amboy clay: Woodbridge, New Jersey?

Dakota group: Kansas.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Mass.

**Juglans baltica?** Heer. Mioc. Balt. Fl., p. 98, pl. xxix, f. 8-12, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——: Black Buttes, Wyoming.

**Juglans bilinica** Ung., 1850=Hicoria juglandiformis.

**Juglans californica** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 34, pl. ix, f. 14; pl. x, f. 2, 3, 1878.

Miocene: Chalk Bluffs, California.

**Juglans cinerea?** Du. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

——: Porcupine Creek, Canada.

**Juglans costata** (Presl.) Brongn. Tableau d. Genres Vég. Foss., p. 168 [119], 1849; Lx., Cret. and Tert. Fl., p. 190, pl. xxxix, f. 5, 1883.

Juglandites costatus Presl. In Sternberg, Versuch, vol. ii, p. 207, 1833.

**Juglans acuminata?** Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872].

Green River group: Florissant, Colorado.

**Juglans crassipes** Heer. Neue Denkschr. Schw. Gesel., vol. xxiii, mem. 2, p. 23, pl. vi, f. 3, 1869; Lx., Fl. Dak. Gr., p. 69, pl. xlix, f. 1-3; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 51, pl. 175, f. 3, 1894.

Dakota group: Kansas.

Cretaceous: Brooklyn, New York.

**Juglans Crossii** nom. nov.

**Juglans denticulata** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 483, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]; Tert.

Fl., p. 289, pl. lviii, f. 1, 1878. [J. denticulata Heer, 1869, preoccupied by J. denticulata O. Web., 1852].

Green River group: Green River, Wyoming.

Livingston beds: Bozeman coal field, Montana.

Denver group?: Carbon, Wyoming.



- Juglans Debeyana** (Heer) Lx. Am. Journ. Sci., vol. xlv, p. 101, 1868.  
Populus? Debeyana Heer. Phyll. Crét. d. Nebr., p. 14, pl. i, f. 1, 1866.  
Dakota group: Decatur, Nebr.; New Ulm, Minnesota.
- Juglans dentata** Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].  
Eocene: Green River, Wyoming.
- Juglans denticulata** Heer = **Juglans Crossii**.
- Juglans egregia** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 36, pl. ix, f. 12; pl. x, f. 1, 1878.  
Miocene: Chalk Bluffs, California.
- Juglans florissanti** Lx. Cret. and Tert. Fl., p. 190, 1883.  
Green River group: Florissant, Colorado.
- Juglans harwoodensis** Dn. Trans. Roy. Soc., Canada, vol. i, sec. iv, p. 28, pl. viii, f. 31, 1882 [1883].  
Upper Cretaceous: Nanaimo, Vancouver Island.
- Juglans hesperia** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 723, pl. xcix, f. 8, 1898.  
Payette formation: Marsh, Idaho.
- Juglans laurinea** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 35, pl. ix, f. 11, 1878.  
Miocene: Chalk Bluffs, California.
- Juglans Leconteana** Lx. Tert. Fl., p. 285, pl. liv, f. 10-13, 1878.  
Denver group?: Evanston, Wyoming.  
Laramie group: Marshall, Colorado.  
Eocene?: Cherry Creek, Oregon.
- Juglans nigella** Heer. Fl. Foss. Alask., p. 38, pl. ix, f. 2-4, 1869; Lx., Cret. and Tert. Fl., p. 235, pl. xlvia, f. 11, 1883.  
Eocene?: Port Graham, Alaska.  
Fort Union group: Montana; Bad Lands, Dakota.
- Juglans nigella** Heer, Dn. Rept. 49th Parallel = **Juglans rugosa**.
- Juglans obtusifolia** Heer. Fl. Tert. Helv., vol. iii, p. 89, pl. cxxix, f. 9, 1859; Lx., Ahn. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 12, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]  
Laramie group?: Evanston, Wyoming.
- Juglans occidentalis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].  
Eocene: Green River, Wyoming.
- Juglans oregoniana** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 35, pl. ix, f. 10, 1878.  
Miocene: Chalk Bluffs, California.
- Juglans picroides** Heer. Fl. Foss. Alask., p. 39, pl. ix, f. 5, 1869.  
Eocene?: Port Graham, Alaska.

**Juglans rhamnoides** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 294, 1871 [1872]; Tert. Fl., p. 284, pl. liv, f. 6-9, 1878.

Rhamnus Rossmiessleri Ung. Lx., Ann. Rept., op. cit., p. 314, 1874 [1876].

Livingston beds: Bozeman coal field, Montana.

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Fort Union group: Bad Lands, Dakota; Porcupine Creek, British Columbia.

Eocene?: Cherry Creek, Oregon.

**Juglans rostrata** Göpp. = *Hicoria rostrata*.

**Juglans rugosa** Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1868; Tert. Fl., p. 286, pl. liv, f. 5, 4; pl. lv, f. 1-9; pl. lvi, f. 1, 2, 1878.

Nyssa lanceolata Lx. Tert. Fl., p. 245, pl. xxxv, f. 5 [non f. 6], 1878.

**Juglans nigella** Heer, Dn. Rept. 49th Parallel.

Denver group: Bozeman coal field, Montana; Golden, Colorado.

Canadian upper Laramie: Great Valley.

Laramie group: Evanston, Wyoming? Black Buttes, Wyoming.

Eolignitic: Wickliffe, Kentucky.

Eocene?: Cherry Creek, Oregon; Lassen County, California.

**Juglans Saffordiana** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xx, f. 7, 1869.

Eolignitic: Lagrange, Tennessee.

**Juglans Schimperi** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 8, 1871 [1872]; Tert. Fl., p. 287, pl. lvi, f. 5-10, 1878

Green River group: Green River, Wyoming.

Denver group: Golden, Colorado.

Canadian upper Laramie: Great Valley.?

**Juglans Smithsoniana** Lx. = *Ficus Smithsoniana*.

**Juglans thermalis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 17, 1871 [1872]; Tert. Fl., p. 287, pl. lvi, f. 3, 4, 1878.

Denver beds: Golden, and Hot Springs, Middle Park, Colorado.

**Juglans Townsendi** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 222, pl. ix, f. 5, 1894.

Eocene?: Herendeen Bay, Alaska.

**Juglans Unger** Heer. Tert. Fl. Helv., vol. iii, p. 199, pl. clv, f. 18, 1859; Ward, Bull. U. S. Geol. Surv. No. 37, p. 33, pl. xiv, f. 6, 1887.

Fort Union group?: Burns's Ranch, Montana.

**Juglans vetusta** Heer. Fl. Tert. Helv., vol. iii, p. 90, pl. cxxvii, f. 40-44, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 22, 1888.

Eocene?: Cherry Creek, Oregon.

**Juglans Woodiana** Heer. Neue Denkschr., vol. xxi, p. 9, pl. ii, f. 4-7, 1865; Lx., Cret. and Tert. Fl., p. 236, 1883.

Eocene?: Burrard Inlet, British Columbia; Chignik Bay, Alaska.

Fort Union group: Bad Lands, Dakota.

**Juglans** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Fossil wood.]

Canadian upper Laramie: Souris River.

**Juglans** sp., Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

**Juglans** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

**JUNCUS** (Tournefort.) Linnæus. Syst., ed. i, 1735.

**Juncus** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 5, 1871 [1872].

Green River group: Green River, Wyoming.

**JUNIPERUS** (Tournefort.) Linnæus. Syst., ed. i, 1735.

**Juniperus hypnoides** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, pl. xlv, f. 3; xlv, f. 18, 1882; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 29, pl. i, f. 1, 1892.

Cretaceous: Kreischerville, Staten Island; Marthas Vineyard, Mass.

**Juniperus macilenta** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, pl. xxv, f. 10, 10b, 11, 1882; Newby., Fl. Amboy Clays, p. 54, pl. x, f. 7, 1895 [1896].

Dammara microlepis Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 47, 1882.

Amboy clay: Woodbridge, New Jersey.

**KALMIA** Linnæus. Diss. Chen., p. 18, 1750.

**Kalmia Brittoniana** Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 34, pl. ii, f. 6-8, 1892.

Cretaceous: Staten Island.

**LARICOPSIS** Fontaine. Potomac Fl., p. 232, 1889.

**Laricopsis angustifolia** Fontaine. Potomac Fl., p. 233, pl. cii, f. 9, 10; ciii, f. 1, 4, 1889.

Potomac formation: Near Dutch Gap Canal and Trents Reach, Virginia.

**Laricopsis brevifolia** Font. Potomac Fl., p. 234, pl. cii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal and Trents Reach, Virginia.

**Laricopsis longifolia** Font. Potomac Fl., p. 233, pl. cii, f. 7, 8; ciii, f. 2, 3; clxv, f. 4; clxviii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

Trinity division: Glenrose, Texas.

**LARIX** Adanson. Fam. Pl., vol. 2, p. 480, 1763.

*Larix americana* Mx. = *Larix laricina*.

**Larix churchbridgensis** Penhallow. Am. Geol., vol. ix, p. 370, 1892.

Interglacial: Churchbridge, Manitoba.

**Larix larcina** (Du Roy) Kock.

*Larix americana* Mx. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890; Trans. Roy. Soc. Canada, 2d ser., sec. iv, p. 60, 1896.

Pleistocene: Moose River, Montreal; Fort Madison, Iowa; New Brunswick; Scarboro Heights, Ontario.

**LASTREA** Presl. Pterid, p. 73, 1836.

**Lastrea (Goniopteris) Fischeri** Heer. Fl. Tert. Helv., vol. i, p. 34, pl. ix, f. 3, 1855; Lx., Cret. and Tert. Fl., p. 239, pl. i, f. 1, 1a, 1883.

Miocene: John Day Valley, Oregon.

**Lastrea (Goniopteris) goldiana** Lx. Tert. Fl., p. 56, pl. iv, f. 13, 1878.

*Aspidium goldianum* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 393, 1873 [1874].

Denver beds: Golden, Colorado.

**Lastrea (Goniopteris) intermedia** Lx. Tert. Fl., p. 56, pl. iv, f. 14, 1878.

*Aspidium (Lastrea) pulchellum* Heer. In Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1872].

*Aspidium (Lastrea) Fischeri* Heer. In Lx., loc. cit., p. 384, 1870 [1872].

Denver beds?: Golden, Colorado.

**Lastrea (Goniopteris) Knightiana** Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Curren Creek, Oregon.

*Lastrea (Goniopteris) polypodioides?* Ett. = *Dryopteris (Goniopteris) polypodioides*.

**Lastrea styrica** Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874]. [Not afterwards mentioned by Lesquereux.]

——?: Blakes Fork, Uinta Mountains.

*Lathraea arguta* Lx. = *Dryopteris arguta*.

**LAURELIA** Jussieu. In Ann. Mus. Par., vol. xiv, p. 134, 1809.

**Laurelia primæva** Lx. Fl. Dak. Gr., p. 108, pl. xx, f. 8, 1892.

Dakota group: Kansas.

**LAURINOXYLON** Felix. Die Holzopale Ungarns: Jahrb. d. k. Geol. Anstalt, vol. vii, p. 27, 1884.

*Laurinoxylon aromaticum* Felix = *Perseoxylon aromaticum*.

**Laurinoxylon Branneri** Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 256, pl. ix, f. 8, 9; x, f. 1, 2; xi, f. 4, 1889.

Tertiary [Orange Sand]: Bolivar Creek, Poinsett County, and Big and Little Crow Creeks, St. Francis County, Arkansas.

**Laurinoxylon Lesquereuxiana** Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 258, pl. x, f. 3, 4; xi, f. 3, 4, 1889.

Tertiary: Near Wittsburg, Cross County, Arkansas.

**Laurinoxylon?** sp., Kn. Ann. Rept. Geol. Surv. Ark. for 1889, vol. ii, p. 259, 1889.

Tertiary [Orange Sand]: Red Bluff, Jefferson County, Arkansas.

**LAUROPHYLLUM** Göppert. Neues Jahrb. 1853, p. 434, as nomen nudum: Die Tertiärf. Java., p. 45, 1854.

**Laurophyllum angustifolium** Newby. Fl. Amboy Clays, p. 86, pl. xvii, f. 10, 11, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Laurophyllum debile** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. ii, f. 7, 7a, 1882 [1883].

Mill Creek series: Forks of Peace River, Northwest Territory;  
North Fork Old Man River.

**Laurophyllum ellsworthianum** Lx. = *Quercus ellsworthianus*.

**Laurophyllum insigne** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. vii, f. 24, 25, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Laurophyllum lanceolatum** Newby. Fl. Amboy Clays, p. 87, pl. xvii, f. 1, 12, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Laurophyllum minus** Newby. Fl. Amboy Clays, p. 86, pl. xvi, f. 7-9. 1895 [1896].

Amboy clay: New Jersey.

**Laurophyllum reticulatum** Lx. = *Ficus reticulata*.

**LAURUS** L. Gen., ed. i, p. 120, 1737.

**Laurus acuminata** Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Fort Union group: Valley of the Yellowstone, Yellowstone.

**Laurus angusta** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 76, pl. xx, f. 1b, 7; pl. xliii, f. 1c, 1882; Lx., Fl. Dak. Gr., p. 93, pl. xvi, f. 7, 1892.

Dakota group: Kansas.

**Laurus antedecens** Lx. Fl. Dak. Gr., p. 92, pl. xi, f. 3, 1892.

Dakota group: Kansas.

**Laurus Brossiana** Lx. = *Persea Brossiana*.

**Laurus californica** Lx. Cret. and Tert. Fl., p. 252, pl. lvii, f. 3; lviii, f. 6-8, 1883; Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 1, 1888.

Miocene: Corral Hollow, California; Boaz, Graves County, Kentucky.

**Laurus carolinensis** Michx. = *Persea Borbonia*.

**Laurus crassinervis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, 1882 [1883].

Cretaceous: Susqua River, Northwest Territory.

Intermediate series (Cretaceous): North Fork Old Man River, British Columbia.

Mill Creek series (Cretaceous): Mill Creek.

**Laurus Colombi** Heer. Neue Denkschr., vol. xxi, p. 7, pl. i, f. 6, 1865.

—?: Nanaimo; Vancouver Island.

**Laurus Fürstenbergii** Al. Br. In Unger, Gen. et Sp. Pl. Foss., p. 423, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 26, 1888.

Miocene?: Corral Hollow, California.

**Laurus grandis** Lx. Cret. and Tert. Fl., p. 251, pl. lviii, f. 1, 3, 1883.

Miocene: Corral Hollow, California.

**Laurus Hollæ** Heer. Fl. Foss. Aret., vol. vi, abt. ii, p. 76, pl. xxxiii, f. 13; pl. xlv, f. 5b; xlv, f. 3, 1882; Lx., Fl. Dak. Gr., p. 92, pl. xii, f. 8, 1892.

Dakota group: Kansas; Staten Island?

**Laurus Knowltoni** Lx. Fl. Dak. Gr., p. 94, pl. i, f. 4, 1892.

Dakota group: Kansas.

**Laurus labrusca** Ung. = *Sterculia labrusca*.

**Laurus macrocarpus** Lx. Am. Journ. Sci., vol. xlv, p. 98, 1868; Cret. Fl., p. 74, pl. x, f. 2, 1874; Fl. Dak. Gr., p. 95, 1892.

Dakota group: Decatur, Nebraska.

**Laurus (Carpites) microcarpa** Lx. Fl. Dak. Gr., p. 93, pl. xvi, f. 8, 1892.

Dakota group: Kansas.

**Laurus modesta** Lx. Cret. and Tert. Fl., p. 53, pl. xvi, f. 4, 1883.

Dakota group: Morrison, Colorado.

**Laurus nebrascensis** Lx. Am. Journ. Sci., vol. xlv, p. 98, 1868; Cret. Fl., p. 74, pl. x, f. 1; xxviii, f. 14, 1874.

*Persea nebrascensis* Lx. Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 9, 10, 1869.

Dakota group: Decatur, Nebraska; Kansas; New Ulm, Minnesota.

Amboy clay?: Sayreville, New Jersey?

**Laurus Newberryana** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 179, f. 5, 1892; Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard, Massachusetts.

**Laurus obovata** Web. Palæontogr., vol. ii, p. 180, pl. xx, f. 4, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1872 [1873].

[Not afterwards referred to by Lesquereux.]

—— ? : Black Buttes, Wyoming.

**Laurus ocoteoides** Lx., 1878 = *Laurus Wardiana*.

**Laurus Omalii** Sap. and Mar. Essai Vég. d. Marnes Heers., d. Gelin-den, Mem. Cour. Acad. Belg., vol. xxxvii, 1873, p. 49, pl. vi, f. 1, 1874; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 52, pl. 176, f. 3, 6, 1894.

Cretaceous: Sea Cliff and Glen Cove, Long Island.

**Laurus pedatus** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 418, pl. xix, f. 1, 1869.

Eolignitic: Mississippi.

**Laurus plutonia** Heer. Fl. Foss. Aret., vol. vi, abt. ii, p. 75, pl. xix, f. 1d, 2-4, etc., 1882; Lx., Fl. Dak. Gr., p. 91, pl. xiii, f. 5, 6; pl. xii, f. 5, 1892.

Amboy clay: New Jersey.

Clay marl: Cliffwood, New Jersey.

Dakota group: Kansas; New Ulm, Minnesota?

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Massachusetts.

**Laurus præstans** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 368, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv., p. 305, 1874 [1876]; Tert. Fl., p. 215, pl. lxiii, f. 7, 1878.

Laramie group: Point of Rocks, Wyoming.

**Laurus primigenia** Ung. Gen. et Sp. Pl. Foss., p. 423, 1850; Heer, Proc. Acad. Nat. Sci. Phila., vol. x, p. 265, 1858; Lx., Ann. Rept., op. cit., p. 406, 1872 [1873]; Tert. Fl., p. 214, pl. xxxvi, f. 5, 6, 8, 1878; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 33, pl. ii, f. 20; iii, f. 3, 1892.

Denver beds: Golden, Colorado.

Denver beds?: Carbon and Evanston, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Cretaceous?: Selma, Texas; Staten Island?

**Laurus princeps** Heer. Fl. Tert. Helv., vol. ii, p. 77, pl. lxxxix, f. 16, 17; xc, f. 17, 20; xcvii, f. 1, 1856; Lx., Cret. and Tert. Fl., p. 250, pl. lviii, f. 2, 1883.

Miocene: Corral Hollow, California.

**Laurus proteæfolia** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 342, pl. v, f. 1, 2, 1874 [1876]; Cret. and Tert. Fl., p. 52, pl. iii, f. 9, 10; xvi, f. 6, 1883.

Dakota group: Morrison, Colorado; Fort Harker, Kansas.

**Laurus resurgens** Sap. Études: Ann. sci. nat. Bot. 5th ser., vol. iv, p. 132, pl. vii, f. 9a, 9b, 1866; Ward, Bull. U. S. Geol. Surv., no. 37, p. 47, pl. xxiii, f. 7, 1887.

Fort Union group?: Bull Mountains, Montana.

Miocene: Corral Hollow, California.

**Laurus salicifolia** Lx. Cret. and Tert. Fl., p. 251, pl. lviii, f. 4, 5, 1883.

Miocene: Corral Hollow, California.

**Laurus Schmidtiana** Heer. Fl. Foss. Aret., vol. v, abt. ii, p. 50, pl. xv, f. 8; 1878; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

**Laurus sessiliflora** Lx. = *Malapœna sessiliflora*.

**Laurus socialis** Lx. Tert. Fl., p. 213, pl. xxxvi, f. 1, 2, 3, 4, 7, 1878.

Eocene?: Lassen County, California.

Denver beds: Golden, Colorado.

Livingston beds: Bozeman coal field, Montana.

Eolignitic?: Cross Lake, Louisiana.

Laramie group: Evanston and Hodges Pass, Wyoming.

**Laurus teliformis** Lx. Fl. Dak. Gr., p. 94, pl. 1, f. 9, 1892.

Dakota group: Kansas.

**Laurus utahensis** Lx. Tert. Fl., p. 216, pl. xxvi, f. 11, 1878.

Laramie group: Hodges Pass, Wyoming?; Cross Lake, Louisiana.

Eolignitic: Cross Lake, Louisiana.

**Laurus Wardiana** nom. nov.

*Laurus ocoteoides* Lx. Tert. Fl., p. 215, pl. xxxvi, f. 10, 1878. [Not Massalongo, 1858.]

Laramie group: Golden, Colorado.

**Laurus** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Sayreville, New Jersey.

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**Laurus** sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

**Laurus** sp. Kn. In Vaughan, Am. Geol., vol. xvi, p. 308, 1895.

Eolignitic: Old Port Caddo Landing, Harrison County, Texas.

**LEGUMINOSITES** Bowerbank. Hist. Foss. Fr. and Seeds Lond. Clay, p. 124, 1840.

**Leguminosites alternans** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Cret. and Tert. Fl., p. 202, 1883.

Green River group: Mouth White River.

**Leguminosites? arachioides** Lx. Tert. Fl., p. 301, pl. lix, f. 13, 14, 1878; Dn., Geol. Surv. Canada, Rept. of Prog. for 1877-78, p. 186*b*, 1878.

Carpolithes arachioides Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1872 [1873].

Fort Union group?: Clear Creek, Montana.

Denver group: Middle Park, Colorado.

Laramie group?: Evanston, Wyoming.

**Leguminosites atanensis** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 119, pl. xxxiv, f. 6, 1874; Newby., Fl. Amboy Clays, p. 97, pl. xlii, f. 40, 1895 [1896].

Amboy clay: New Jersey?

**Leguminosites? borealis** Dn. Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, pl. x, f. 7, 1889.

Miocene?: Mackenzie River.

**Leguminosites cassioides** Lx., 1878 = **Leguminosites Lesquereuxiana**.

**Leguminosites constrictus** Lx. Fl. Dak. Gr., p. 151, pl. xlv, f. 3, 1892.

Dakota group: Kansas.

Cretaceous?: Oak Neck, Long Island.

**Leguminosites convolutus** Lx. Fl. Dak. Gr., p. 151, pl. xlv, f. 4, 1892.

Dakota group: Kansas.

Cretaceous?: Glen Cove, Long Island.

**Leguminosites coronilloides?** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 119, pl. xxxiv, f. 14, 1874; Lx., Fl. Dak. Gr., p. 149, pl. xlii, f. 10, 1892.

Dakota group: Kansas.

Amboy clay: New Jersey.

**Leguminosites cultriformis** Lx. Cret. and Tert. Fl., p. 86, pl. x, f. 4, 1883.

Dakota group: Locality not given.

**Leguminosites dakotensis** Lx. Fl. Dak. Gr., p. 150, pl. xxxviii, f. 5, 1892.

Dakota group: Kansas.



**Leguminosites frigidus** Heer. Fl. Foss. Arct., vol. vii, p. 44, pl. lxxv, f. 13; lv, f. 21a, 22, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 34, pl. ii, f. 11, 1892.

Cretaceous: Staten Island.

**Leguminosites hymenophyllus** Lx. Fl. Dak. Gr., p. 152, pl. lv, f. 7-9; pl. lvi, f. 3, 1892.

Dakota group: Kansas.

**Leguminosites insularis** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 103, pl. xlv, f. 6, 1882; Lx., Fl. Dak. Gr., p. 152, pl. liv, f. 4, 1892.

Dakota group: Kansas.

**Leguminosites Lesquereuxiana** nom. nov.

*Leguminosites cassioides* Lx\*. Tert. Fl., p. 300, pl. lix, f. 1-4, 1878. [\* *L. cassioides* Lx., 1878, preoccupied by *L. cassioides* Engl., 1870.]

Green River group: Green River Station, Wyoming.

Laramie group: Bozeman coal field, Montana.

*Leguminosites Marcouanus* Heer=*Liriodendron primævum*.

**Leguminosites omphalobioides** Lx. Fl. Dak. Gr., p. 149, pl. xxxviii, f. 4, 1892; Newby., Fl. Amboy Clays, p. 97, pl. xlii, f. 39, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey.

**Leguminosites phaseolites?** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 118, pl. xxxiv, f. 7-11, 1874; Lx., Fl. Dak. Gr., p. 153, pl. lv, f. 10, 1892.

Dakota group: Kansas.

**Leguminosites pisiformis?** Heer. Fl. Tert. Helv., vol. iii, p. 129, pl. cxxxix, f. 37-39, 1889; Lx., Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 716, f. 152, 1861.

——: Brandon, Vermont.

**Leguminosites podogonialis** Lx. Fl. Dak. Gr., p. 148, pl. xiii, f. 11; pl. xxxviii, f. 16, 1892.

Dakota group: Kansas.

**Leguminosites serrulatus** Lx. Cret. and Tert. Fl., p. 202, pl. xxxix, f. 7, 8, 1883.

Green River group: Florissant, Colorado.

**Leguminosites truncatus** Kn. In Lesquereux, Fl. Dak. Gr., p. 150, pl. xxi, f. 7, 1892.

Dakota group: Kansas.

*Leguminosites* sp., Dn. = *Leguminosites arachioides*.

**Leguminosites** sp., Heer. Neue Denkschr., vol. xxi, p. 10, pl. ii, f. 8, 1865; Dn.

——: Burrard Inlet, British Columbia.

**Leguminosites** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 418, 1873 [1874].

——: Elko Station, Nevada.

**Leguminosites** sp., Lx. Cret. and Tert. Fl., p. 203, pl. xxxix, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

**Leguminosites** sp., Lx. Proc. U. S. Nat. Mus., vol. x, p. 43, 1887.

———: Upper Kanab Valley, Utah.

**Leguminosites** sp., Lx. In Diller, Eighth Ann. Rept. U. S. Geol. Surv., p. 420, 1889.

Miocene?: Lassen County, California.

**Leguminosites** sp., Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 21, 1893.

Dakota group: Goodhue Township, Minnesota.

**Leguminosites** sp., Lx. Proc. U. S. Nat. Mus. vol. xi, p. 30, 1888.

Eocene?: Lassen County, California.

**LEMNA** Linnaeus. Syst., ed. i, 1735.

**Lemna ? bullata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 363, 1875 [1876].

Laramie group: Point of Rocks, Wyoming.

**Lemna penicillata** Lx. Cret. and Tert. Fl., p. 143, pl. xxiii, f. 8, 1883.

Green River group: Florissant, Colorado.

**Lemna scutata** Dn. Rept. on Geol. 49th Parallel, Appen. A, p. 329, pl. xvi, f. 5, 6, 1875; Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 23, pl. i, f. 6, 1886 [1887].

Fort Union group: Burns's Ranch, Montana.

Lignitic Tertiary: Near forty-ninth parallel.

Montana group: Point of Rocks, Wyoming.

Laramie group: Wood Mountain, Pincher Creek, British Columbia.

**LEPTOSTROBUS** Heer. Fl. Foss. Arct., vol. iv, abt. ii: Mém. Acad. Imp. Sci. St. P., 7th ser., vol. xxii, no. 12, p. 72, 1876.

**Leptostrobos foliosus** Font. Potomac Fl., p. 230, pl. ci, f. 4; ciii, f. 5; civ, f. 1, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**Leptostrobos longifolius** Font. Potomac Fl., p. 228, pl. ci, f. 2, 3; cii, f. 1-4; ciii, f. 6-12; civ, f. 6, 1889.

Potomac formation: Fredericksburg, near Brooke, near Potomac Run, and near Dutch Gap Canal, Virginia.

Kootanie: Anthracite and Canmore, British Columbia.

**Leptostrobos ? multiflorus** Font. Potomac Fl., p. 230, pl. clxv, f. 6, 1889.

Potomac formation: near Brooke, Virginia.

**Leptostrobos ?** seeds of, sp., Font. Potomac Fl., p. 332, pl. cxxxvi, f. 11, 1889.

Potomac formation: Kankeys, Virginia.

**Leptostrobos ?** seeds of, (a) sp., Font. Potomac Fl., p. 231, pl. cxxxv, f. 6, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Leptostrobos ?** seeds of, (b) sp., Font. Potomac Fl., p. 231, pl. cxxxvi, f. 10, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**LEUCOTHOE** D. Don. In Edinb. N. Phil. Journ., vol. xvii, p. 159, 1834.

**Leucothoë racemosa** (L.) A. Gray. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

Libocedrus cretacea Heer=Thuja cretacea.

Lindera=Benzoin.

Lindera Masoni Lx.=Benzoin Masoni.

Lindera venusta Lx=Benzoin venusta.

**LIQUIDAMBAR** Linnaeus. Hort. Cliff, p. 486, 1737.

**Liquidambar californicum** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 14, pl. vi, f. 7c; pl. vii, f. 3, 6, 1878.

Miocene: Chalk Bluffs, California.

**Liquidambar europæum** Al. Br. In Buckl. Geol., vol. i, p. 115, 1836? Lx., Cret. and Tert. Fl., p. 159, pl. xxxii, f. 1, 1883.

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene?: Port Graham, Alaska.

**Liquidambar europæum** Al. Br., Lesquereux, 1888 = **Liquidambar styraciflua** L.

**Liquidambar gracilis** Lx.=*Aralia?* *gracilis*.

**Liquidambar integrifolius** Lx. Am. Journ. Sci., vol. xlvi, p. 93, 1868; Cret. Fl., p. 56, pl. ii, f. 1-3; xxiv, f. 2; xxix, f. 8, 1874.

Dakota group: Salina, Kansas.

Mill Creek series: Mill Creek.

**Liquidambar protensum** Ung. Steiermärk. Zeitschr., n. Folge, ix Jahrg., p. 59 [36], 1848; Gen. et Sp. Pl. Foss., p. 415, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 13, pl. viii, f. 3, 1888.

Miocene: John Day Valley, Oregon.

**Liquidambar styraciflua** L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892; Kn., Am. Geol., vol. xviii, p. 371, 1896.

**Liquidambar europæum** Al. Br. Lesquereux, Proc. U. S. Nat. Mus., vol. xi, p. 36, 1888.

Miocene?: Bridgeton, New Jersey.

Glacial: Morgantown, West Virginia.

**LIRIODENDRON** Linnaeus. Spec. Pl., p. 535, 1753.

**Liriodendron acuminatum** Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881; Lx., Fl. Dak. Gr., p. 207, pl. xxvii, f. 2, 3, 1892.

Dakota group: Kansas.

**Liriodendron acuminatum bilobatum** Lx. Fl. Dak. Gr., p. 207, pl. xxviii, f. 4, 1892.

Dakota group: Kansas.

**Liriodendron alatum** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, no. 11, p. 467, pl. 220, 221, 1894.

Laramie group: Walsenburg, Colorado.

**Liriodendron cruciforme** Lx.=*L. giganteum cruciforme*.

**Liriodendron giganteum** Lx. Am. Journ. Sci., vol. xlv, p. 99, 1868;  
Cret. Fl., p. 93, pl. xxii, f. 2, 1874.

Dakota group: Fort Harker, Kansas.

**Liriodendron giganteum cruciforme** Lx. Fl. Dak. Gr., p. 206, pl. xxviii, f. 1, 2, 1892.

**Liriodendron cruciforme** Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881.

Dakota group: Kansas.

**Liriodendron intermedium** Lx. Am. Journ. Sci., vol. xlv, p. 99, 1868;  
Fl. Dak. Gr., p. 207, pl. xxv, f. 1, 1892.

Dakota group: Southern Nebraska; Kansas.

**Liriodendron laramiense** Ward. Bull. U. S. Geol. Surv., no. 37, p. 102, pl. xlviii, f. 2, 1887.

Montana formation: Point of Rocks, Wyoming.

**Liriodendron oblongifolium** Newby. Bull. Torr. Bot. Club, vol. xiv, no. 1, p. 5, pl. lxi, f. 1, 1887; Hollick, op. cit., vol. xxi, p. 62, pl. 179, f. 3, 1894.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Long Island.

**Liriodendron Meekii** Heer. Proc. Phila. Acad. Sci., vol. x, p. 265, 1858; Phyll. Crét. d. Nebr., p. 21, pl. iv, f. 3, 4, 1866; Fl. Dak. Gr., p. 205, pl. xxviii, f. 5, 6, 1892.

Dakota group: Mouth of Big Sioux, Nebraska.

**Liriodendron Meekii** var. **Marcouana** Heer = **Liriodendron primævum**.

**Liriodendron Meekii** var. **mucronulata** Heer = **Liriodendron primævum**.

**Liriodendron Meekii** var. **obcordata** Heer = **Liriodendron primævum**.

**Liriodendron pinnatifidum** Lx. Bull. Mus. Comp. Zoöl. Camb., vol. vii, p. 227, 1881; Fl. Dak. Gr., p. 209, pl. xxvii, f. 4, 5, 1892.

Dakota group: Kansas.

**Liriodendron prætulipiferum** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. viii, f. 27, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

**Liriodendron primævum** Newby. Later Extinct Floras, p. 12, 1868;  
Lx., Fl. Dak. Gr., p. 203, pl. xxiv, f. 4; xxvi, f. 1-4, 1892.

Leguminosites **Marcouana** Heer. Proc. Phil. Acad. Sci., vol. x, p. 265, 1858.

**Bumelia Marcouana** (Heer) Lx. Cret. Fl., p. 90, pl. xxviii, f. 2, 1874.

**Phyllites obcordatus** Heer. Proc. Phil. Acad. Sci., vol. x, p. 266, 1858.

**Liriodendron Meekii** var. **Marcouana** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 88, 1882.

**Liriodendron Meekii** var. **obcordata** Heer. Op. cit., p. 88, 1882.

**Liriodendron Meekii** var. **mucronulata** Heer. Op. cit., p. 88, 1882.

**Phyllites cotinus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 364, 1874 [1876].

Dakota group: Kansas and Nebraska.

Cretaceous: Staten Island, Long Island, New York.

**Liriodendron quercifolium** Newby. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 1, 1887; Fl. Amboy Clays, p. 81, pl. li, f. 1-6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Liriodendron semialatum** Lx. Bull. Mus. Comp. Zool. Camb., vol. vii, p. 227, 1881; Fl. Dak. Gr., p. 204, pl. xxv, f. 2-4; pl. xxix, f. 3, 1892.

Dakota group: Kansas.

**Liriodendron simplex** Newby. = **Liriodendropsis simplex** + **L. angustifolia**.

**Liriodendron Snowii** Lx. Fl. Dak. Gr., p. 209, pl. xxix, f. 1, 2, 1892.

Dakota group: Kansas.

**Liriodendron succedens** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. viii, f. 26, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Liriodendron Wellingtonii** Lx. Fl. Dak. Gr., p. 208, pl. xxviii, f. 3, 1892.

Dakota group: Kansas.

**Liriodendron** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards referred to by author.]

Laramie group?: Six miles above Spring Canyon, Montana.

**LIRIODENDROPIS** Newberry. Fl. Amboy Clays, p. 82, 1895 [1896].

**Liriodendropsis angustifolia** Newby. Fl. Amboy Clays, p. 84, pl. liii, f. 8, 1895 [1896].

**Liriodendron simplex** Newby., in part. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 4, 1887.

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

**Liriodendropsis simplex** Newby. Fl. Amboy Clays, p. 83, pl. xix, f. 2, 3; liii, f. 1-4, 7, 1895 [1896].

**Liriodendron simplex** Newby., in part. Bull. Torr. Bot. Club, vol. xiv, p. 6, pl. lxii, f. 2, 3, 1887.

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

**LIRIOPHYLLUM** Lesquereux. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 482, 1876 [1878].

**Liriophyllum Beckwithii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 482, 1876 [1878]; Cret. and Tert. Fl., p. 76, pl. x, f. 1, 1883; Fl. Dak. Gr., p. 210, 1892.

Dakota group: Morrison, Colorado.

**Liriophyllum obcordatum** Lx. Cret. and Tert. Fl., p. 77, 1883; Fl. Dak. Gr., p. 210, pl. xxviii, f. 7, 1892.

Dakota group: Morrison, Colorado.

**Liriophyllum populoides** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 483, 1876 [1878]; Cret. and Tert. Fl., p. 76, pl. xi, f. 1, 2, 1883.

Dakota group: Colorado and Kansas.

**Litsea** = **Malapoenna**.

**Litsæa carbonensis** Ward = **Malapoenna carbonensis**.

**Litsea cretacea** Lx. = **Malapoenna cretacea**.

*Litsea falcifolia* Lx. = *Malapoenna falcifolia*.

*Litsea Weediana* Kn. = *Malapoenna Weediana*.

*Litsea* sp., Kn. = *Malapoenna* sp.

**LOMATIA** Robert Brown. Trans. Linn. Soc. Lond., vol. x, p. 199, 1810.

*Lomatia abbreviata* Lx. Cret. and Tert. Fl., p. 167, xliii, f. 17, 1883.  
Green River group: Florissant, Colorado.

*Lomatia acutiloba* Lx. Cret. and Tert. Fl., p. 167, pl. xliii, f. 11-16, 20, 1883.

Green River group: Florissant, Colorado.

*Lomatia hakeæfolia* Lx. Cret. and Tert. Fl., p. 166, pl. xxxii, f. 19, 1883.

Green River group: Florissant, Colorado.

*Lomatia interrupta* Lx. Cret. and Tert. Fl., p. 167, pl. xliii, f. 18, 19, 1883.

Green River group: Florissant, Colorado.

*Lomatia microphylla* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 389, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Tert. Fl., p. 211, pl. lxxv, f. 14, 15, 1878.

Green River group: Mouth of White River.

*Lomatia* ? *Saportanea* Lx. Ann. Rept. U. S. Geo. and Geogr. Surv. Terr., p. 346, 1874 [1876]; Cret. and Tert. Fl., p. 51, pl. iii, f. 8, 1883.

*Todea* ? *Saportanea* Lx. Cret. Fl., p. 48, pl. xxix, f. 1-4, 1874.

Dakota group: Kansas.

*Lomatia* ? *Saportanea* var. *longifolia* Lx. Cret. and Tert. Fl., p. 52, 1883.

Dakota group: Morrison, Colorado.

*Lomatia spinosa* Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 1, 1883.

Green River group: Florissant, Colorado.

Eocene?: Similkameen Valley, British Columbia.

*Lomatia terminalis* Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 2-7, 1883.

Green River group: Florissant, Colorado.

*Lomatia tripartita* Lx. Cret. and Tert. Fl., p. 166, pl. xliii, f. 8-10, 1883.

Green River group: Florissant, Colorado.

**LONCHOCARPUS** Humbolt Bonpland and Kunth. Nov. Gen. et Sp., vol. vi, p. 383, 1823.

*Lonchocarpus novæ-cæsareæ* Hollick. Bull. Torr. Bot. Club, vol. xxiii, p. 49, pl. cclix, f. 6-8, 1896.

Miocene?: Bridgeton, New Jersey.

**LYCOPODIUM** (Ruppino) Linnaeus. Gen. Pl., p. 323, 1737.

*Lycopodium Lesquereuxii* Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

*Selaginella falcata* Lx. Ex. p. Lx., Tert. Fl., p. 46, pl. lxxiv, f. 13, 13a [non pl. lxi, f. 12-15], 1878.

Montana formation: Point of Rocks, Wyoming.

**Lycopodium prominens** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874]; Tert. Fl., p. 45, pl. v, f. 13-13b, 1878.  
Green River group: Elko Station, Nevada.

**Lycopodium** sp., Hinde. Canadian Journal [Can. Institute], vol. xv, p. 399, 1878.

Interglacial: Scarboro Heights, Ontario.

**Lycopodium** sp. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 62, 1896.

Pleistocene: Long Portage, Missinaibi River; Scarboro Heights, Ontario.

**LYGODIUM** Swartz. Schrad. Journ. Bot., vol. ii, p. 106, 1800.

**Lygodium compactum** Lx. Am. Journ. Sci., vol. xvi, p. 206, 1868; Tert. Fl., p. 64, pl. v, f. 9, 1878.

Laramie group: Coal Creek, Colorado.

**Lygodium Dentoni** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 63, pl. lxv, f. 12, 13, 1878.

Green River group: Mouth of White River into Green River.

**Lygodium Marvinei** Lx. Bull. U. S. Geogr. Surv. Terr., vol. i, p. 383, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 309, 1874 [1876]; Tert. Fl., p. 62, pl. v, f. 8, 1878.

———?: Eagle Junction.

**Lygodium Kaulfusii** Heer. Beiträge z. nähern Kennt. d. Sächs.-Thuring. Braunkohle, p. 409, pl. viii, f. 21, 1861.

*Lygodium neuropteroides* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1871]; Tert. Fl., p. 61, pl. v, f. 4-7; pl. vi, f. 1, 1878.

Green River group?: Barrell Springs, Wyoming.

Eocene?: Cherry and Crescent creeks, Oregon.

Eocene: Elk Creek, Yellowstone National Park; Wilkinson coal field, Washington; Cherry Creek, Oregon.

*Lygodium neuropteroides* Lx. = *Lygodium Kaulfusii*.

**Lygodium trichomanoides** Lx. Cret. Fl., p. 45, pl. i, f. 2, 1874.

*Lygodium*? sp., Lx. Am. Journ. Sci., vol. xlv, p. 91, 1868.

Dakota group: Fort Harker, Kansas.

*Lygodium*? sp., Lx. [Am. Journ. Sci., xlv, 91, 1868] = *Lygodium trichomanoides*.

**MACCLINTOCKIA** Heer. Fl. Foss. Arct., vol. i, p. 114, 1868.

**Macclintockia cretacea** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 70, pl. xxxvi, f. 1a; pl. xxxvii, f. 2-4, 1882; Lx., Fl. Dak. Gr., p. 197, pl. lix, f. 4, 1892; Dn., Trans. Roy. Soc. Canada, vol. iii, p. 13, pl. iv, f. 3, 1885.

Dakota group: Kansas.

Mill Creek series: Mill Creek.

**Macclintockia Lyallii** Heer. Fl. Foss. Arct., vol. i, p. 115, pl. xv, f. 1a, 2; xvi, f. 7a, b; xvii, f. 2a, b; xlvii, f. 13; xlviii, f. 8, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

———?: Black Buttes, Wyoming.

**Macclintockia trinervis** Heer. Fl. Foss. Aret., vol. i, p. 115, pl. xv, f. 7-9, 1868; Dn., Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, pl. x, f. 38, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

*Maclura auriantia* Nutt. = *Toxylon pomiferum*.

**MACREIGHTIA** Alphonse de Candolle. Prod., vol. viii, p. 220, 1844.

**Macreightia crassa** Lx. Cret. and Tert. Fl., p. 175, pl. xxxiv, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

**Macrospores?** sp., Font. Potomac Fl., p. 274, pl. cxxxvi, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**MACROTÆNIOPTERIS** Schimper. Pal. Vég., vol. i, p. 610, 1869.

**Macrotaeniopteris vancouverensis** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 55, pl. v, f. 1-3, 1893 [1894].

Upper Cretaceous: Nanaimo.

**MAGNOLIA** Linnæus. Syst., ed. i, 1735.

**Magnolia acuminata** L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Magnolia alternans** Heer. Phyll. Crét. d. Nebr., p. 20, pl. iii, f. 2-4; pl. iv, f. 1, 2, 1866; Cret. Fl., p. 92, pl. xviii, f. 4, 1874; Lx., Fl. Dak. Gr., p. 201, pl. xxxiv, f. 11, 1892; Newby., Fl. Amboy Clays, p. 73, pl. iv, f. 1, 2, 4, 6, 1895 [1896].

Dakota group: Nebraska, Kansas, and Minnesota.

Amboy clay: Woodbridge and Sayreville, New Jersey.

**Magnolia alternans** Heer, Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1871 [1872]. [Not same as Dakota group plant; affinity not stated by Lesquereux and apparently not afterwards mentioned.]

Laramie group?: Three miles above Spring Canyon, Montana.

**Magnolia amplifolia** Heer. Kreidefl. v. Moletein in Mähren, Neue Denkschr. Schw. Ges., vol. xxiii, p. 21, pl. viii, f. 2; ix, f. 1, 1869; Lx., Fl. Dak. Gr., p. 200, pl. xxiv, f. 3, 1892.

Dakota group: Kansas.

**Magnolia angustifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 513 1882 [1883].

*Magnolia attenuata* Web. in Lx. Tert. Fl., p. 250, pl. xlv, f. 6, 1878.

Laramie group: Fishers Peak, New Mexico.

*Magnolia attenuata* O. Web. Lesquereux, 1878 = *Magnolia angustifolia*.

**Magnolia auriculata** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 61, pl. clxxix, f. 6, 7, 1894; Newby., Fl. Amboy Clays, p. 75, pl. xli, f. 13; lviii, f. 1-11, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.



**Magnolia Boulayana** Lx. Fl. Dak. Gr., p. 202, pl. lx, f. 2, 1892.

Dakota group: Kansas.

**Magnolia californica** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 25, pl. vi, f. 5-7, 1878.

Miocene: Chalk Bluffs and Contra Costa, California.

Eocene: Lassen County, California.

**Magnolia Capellinii** Heer. Phyll. Crét. d. Nebr., p. 21, pl. iii, f. 5, 6, 1866; Lx., Rept. on Clays in N. J., p. 29, 1878; Fl. Dak. Gr., p. 203, pl. lxvi, f. 1, 1892.

Dakota group: Tekamah, Nebraska.

Amboy clay: Sayreville, New Jersey?

Cretaceous: Glen Cove, Long Island; Marthas Vineyard; Port McNeill, Vancouver Island.

**Magnolia cordifolia** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 422, pl. xxii, f. 1, 2, 1869.

Eolignitic: Mississippi.

*Magnolia ensifolia* Lx. = *Celastrorhynchium ensifolium*.

**Magnolia glauca** L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Magnolia glaucoides** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 60, pl. clxxv, f. 1, 7, 1894; Newby., Fl. Amboy Clays, p. 74, pl. lvii, f. 1-4, 1895 [1896].

Cretaceous: Sea Cliff, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

**Magnolia Hilgardiana** Lx. Second Rept. Geol. Recon. Arkansas, p. 319, pl. vi, f. 1, 1860; Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xxi, f. 1, 1869; Tert. Fl., p. 249, pl. xliv, f. 4, 1878.

Eolignitic: Mississippi.

Eocene: Lassen County, California.

Fort Union group: Yellowstone Valley, Montana.

Laramie group: Fishers Peak, New Mexico.

**Magnolia Inglefieldi** Heer. Fl. Foss. Arct., vol. i, p. 120, pl. iii, f. 5c; xvi, f. 5, 6, 8b; xviii, f. 1-3, 1868; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 13, 1888.

Miocene: John Day Valley, Oregon.

Eocene?: Lassen County, California.

*Magnolia Inglefeldi* Heer. Lesquereux, Hayden's Ann. Rept., 1872, p. 396 = *Magnolia tenuinervis*.

**Magnolia Isbergiana** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 91, pl. xxxvi, f. 3, 1882; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 60, 1894.

Cretaceous: Glen Cove, Long Island.

**Magnolia Lacoeana** Lx. Fl. Dak. Gr., p. 201, pl. lx, f. 1, 1892; Newby., Fl. Amboy Clays, p. 73, pl. lv, f. 1, 2, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

**Magnolia lanceolata** Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 24, pl. vi, f. 4, 1878.

Miocene: Chalk Bluffs, California; John Day Valley, Oregon.

Miocene?: Cherry Creek, Oregon.

**Magnolia laurifolia** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xx, f. 2, 3, 1869.

Eolignitic: Mississippi; Cross Lake and McLees, Louisiana.

**Magnolia Lesleyana** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 421, pl. xxi, f. 1, 2, 1869; Tert. Fl., p. 248, pl. xliv, f. 1-3, 1878.

Terminalia Radobojensis Heer. Lx., Ann. Rept., op. cit., 1871, suppl., p. 15, 1871 [1872].

Eolignitic: Mississippi.

Laramie group: Raton Mountains, New Mexico.

Laramie group?: Evanston, Wyoming?

**Magnolia longifolia** Newby. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. iii, f. 9, 1892; Newby., Fl. Amboy Clays, p. 76, pl. lv, f. 3, 5; lvi, f. 1-4, 1895 [1896].

Cretaceous: Staten Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

**Magnolia longipes** Newby. In MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 60, pl. clxxviii, f. 3, 1894; Newby., Fl. Amboy Clays, p. 76, pl. liv, f. 1-3, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Cretaceous: Glen Cove, Dosoris Island, Long Island.

**Magnolia magnifica** Du. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. iii, f. 11, 1882 [1883].

Mill Creek series: Coal Brook, Northwest Territory; Mill Creek.

**Magnolia Nordenskiöldi** Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 82, pl. xxi, f. 3; xxx, f. 1, 1877; Lx., Proc. U. S. Nat. Mus., vol. v, p. 448, 1882 [1883].

Eocene?: Chignik Bay, Alaska.

**Magnolia obovata** Newby. Later Extinct Floras, p. 15, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Magnolia obtusata** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 90, pl. xv, f. 12; pl. xxi, f. 3, 1882; Lx., Fl. Dak. Gr., p. 201, pl. lx, f. 5, 6, 1892.

Dakota group: Kansas.

**Magnolia occidentalis** Du. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. x, f. 36, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

**Magnolia ovalis** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 422, pl. xxi, f. 3, 4, 1869.

Eolignitic: Mississippi.

**Magnolia pseudoacuminata** Lx. Fl. Dak. Gr., p. 199, pl. xxiv, f. 2, 1892.

Dakota group: Kansas.

**Magnolia pulchra** Ward. Bull. U. S. Geol. Surv., no. 37, p. 103, pl. xlviii, f. 3, 4, 1887.

Montana formation: Point of Rocks, Wyoming.

**Magnolia rotundifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Laramie group: Fishers Peak, New Mexico.

**Magnolia speciosa** Heer. Neue Denkschr. Schw. Gesel., vol. xxiii, p. 20, pl. vi, fig. 1; ix, f. 2; x, f. 1, 1869; Lx., Cret. and Tert. Fl., p. 72, 1874; Fl. Dak. Gr., p. 202, pl. lx, f. 3, 4, 1892.

Dakota group: Morrison, Colorado.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard, Massachusetts.

**Magnolia tenuifolia** Lx. Am. Journ. Sci., vol. xlvi, p. 100, 1868; Cret. Fl., p. 92, pl. xxi, f. 1, 1874; Fl. Dak. Gr., p. 198, pl. xxiv, f. 1, 1872.

Dakota group: Decatur, Nebraska; Kansas; Peace River, Northwest Territory.

**Magnolia tenuinervis** Lx. Am. Journ. Sci., vol. xlv, p. 207, 1868; Tert. Fl., p. 249, pl. xlv, f. 5, 6; pl. xlv, f. 1-5, 1878.

*Magnolia Inglefeldi?* Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1872 [1873].

Denver group: Golden, Colorado.

Laramie group: Black Buttes and Hogdes Pass, Wyoming.

Laramie group?: Coalville, Utah?

**Magnolia Van Ingeni** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 61, pl. clxxv, f. 6, 1894.

Cretaceous: Sea Cliff, Long Island.

**Magnolia woodbridgensis** Hollick in Newby. Fl. Amboy Clays, p. 74, pl. xxxvi, f. 11; lvii, f. 5-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Magnolia** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Eocene?: Washakie Station, Wyoming.

**Magnolia** sp., Lx. Cret. and Tert. Fl., p. 73, pl. xi, f. 6, 1883.

Dakota group: Morrison, Colorado.

**Magnolia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

**Magnolia** ? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 29, 1890.

Eocene?: Similkameen Valley, British Columbia.

**MAJANTHEMOPHYLLUM** O. Weber. Tertiärfl. d. Niederrh. Braunkohlenf.: Palaeontographica, vol. ii, p. 156 [reprint 42], 1852.

**Majanthemophyllum pusillum** Heer. Fl. Foss. Arct., vol. vii, p. 18, pl. lv, f. 17, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 36, pl. i, f. 7, 1892.

Cretaceous: Staten Island.

**MALAPOENNA** Adanson. Fam. Pl., vol. ii, p. 447, 1763.

**Malapoenna carbonensis** (Ward) n. comb.

*Litsea carbonensis* Ward. Bull. U. S. Geol. Surv., no. 37, p. 48, pl. xxiv, f. 1, 1887.

Laramie group: Carbon, Wyoming.

**Malapoenna cretacea** (Lx.) n. comb.

*Litsea cretacea* Lx. Fl. Dak. Gr., p. 96, pl. xv, f. 2, 1892.

Dakota group: Kansas.

**Malapoenna falcifolia** (Lx.) n. comb.

*Litsea falcifolia* Lx. Fl. Dak. Gr., p. 97, pl. xi, f. 5, 1892.

Dakota group: Kansas.

**Malapoenna sessiliflora** (Lx.) n. comb.

*Laurus sessiliflora* Lx. Ann. Rept., op. cit., p. 407, 1873 [1874].

*Tetranthera sessiliflora* Lx. Ex. p. Tert. Fl., p. 217, pl. xxxiv, f. 1 c, 1 d; pl. xxxv, f. 8 [non f. 9], 1878.

— : Evanston, Wyoming.

**Malapoenna Weediana** (Kn.) n. comb.

*Litsea Weediana* Kn. Bull. U. S. Geol. Surv., no. 105, p. 55, 1893.

*Tetranthera sessiliflora* Lx. Ex. p. Tert. Fl., p. 217, pl. xxxv, f. 9, 1878.

Livingston beds: Bozeman coal field, Montana.

**Malapoenna** sp.

*Litsea* sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**MANICARIA** Gartner. De Fruct., vol. ii, p. 468, 1802.

**Manicaria Haydeni** Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene: Green River, Wyoming.

**Manicaria** sp., Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 143, 1895-96.

Eocene: Burrards Inlet, Vancouver, British Columbia.

**MARSILEA** (Micheli) Linnaeus. Gen. Pl., p. 326, 1737.

**Marsilea attenuata** (Lx.) Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 10, 1894.

*Salvinia attenuata* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 377, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1874 [1876]; Tert.

Fl., p. 65, pl. lxiv, f. 14, 14a, 1878.

Laramie group: Point of Rocks, Wyoming.

*Marsilea Bendirei* Ward = *Porana Bendirei*.

**MENISPERMITES** Lesquereux. Cret. Fl., p. 94, 1874.

*Menispermities acerifolia* Lx. = *Menispermities menispermifolia*.

**Menispermities acutilobus** Lx. Cret and Tert. Fl., p. 78, pl. xiv, f. 2, 1883.

Dakota group: Kansas.

**Menispermities borealis** Heer? Fl. Foss. Arct., vol. vi, abt. ii, p. 91, pl. xxxix, f. 2, 1882; Newby., Fl. Amboy Clays, p. 84, pl. 1, f. 1-6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Menispermities Brysoniana** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 59, pl. clxx, f. 10, 1894.

Cretaceous: Glen Cove, Long Island.

**Menispermities cyclophyllus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 358, pl. vi, f. 4, 1874 [1876].

Dakota group: Kansas.

**Menispermities grandis** Lx. Cret. and Tert. Fl., p. 80, pl. xv, f. 1, 2, 1883.

Dakota group: Kansas.

**Menispermities menispermifolius** (Lx.) n. comb.

*Acerites menispermifolius* Lx. Am. Journ. Sci., vol. xvi, p. 101, 1868.

*Menispermities acerifolia* Lx. Cret. Fl., p. 96, pl. xx, f. 2, 3, 1874.

Dakota group: Decatur, Nebraska.

**Menispermities obtusiloba** Lx. Cret. Fl., p. 94, pl. xxv, f. 1-2; xxvi, f. 3, 1874; Cret. and Tert. Fl., p. 78, 1883.

*Menispermities obtusiloba* var.? Cret. Fl., p. 95, pl. xxii, f. 1, 1874.

*Dombeyopsis obtusiloba* Lx. Am. Journ. Sci., vol. xvi, p. 100, 1868.

Dakota group: Salina River, Kansas.

**Menispermities ovalis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 398, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 357, pl. v, f. 4, 1874 [1876].

Dakota group: Kansas.

**Menispermities populifolius** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 357, pl. v, f. 3, 1874 [1876]; Cret. and Tert. Fl., p. 79, pl. iv, f. 4, 1883.

Dakota group: Kansas.

**Menispermities reniformis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iii, f. 12, 1882 [1883].

———: Coal Brook, Northwest Territory.

**Menispermities rugosus** Lx. Fl. Dak. Gr., p. 196, pl. xxix, f. 7, 1892.

Dakota group: Kansas.

*Menispermities salinensis* Lx. = *Menispermities salinae*.

**Menispermities salinae** (Lx.) n. comb.

*Acer obtusilobium*? Ung. Lesquereux, Am. Journ. Sci., vol. xvi, p. 100, 1868.

*Populites salinae* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

*Menispermities salinensis* Lx. Cret. Fl., p. 95, pl. xx, f. 1, 4, 1874.

Dakota group: Salina River, Kansas.

**Menispermities tenuinervis** Font. Potomac Fl., p. 322, pl. clxxii, f. 8, 1889.

Potomac formation: Baltimore, Maryland.

**Menispermities virginensis** Font. Potomac Fl., p. 321, pl. clxi, f. 1, 2, 1889.

Potomac formation: Near Brooke, Virginia.

**Menispermities Wardianus** Hollick in Newby. Fl. Amboy Clays, p. 85, pl. xxix, f. 9, 11, 1895 [1896].

Amboy clay: No locality.

**Menispermities** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. xi, f. 50, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Menispermities** sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 131, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**MENISPERMUM** Linnæus. Syst., ed. i, 1735.

**MENYANTHES** Linnæus. Syst., ed. i, 1735.

**Menyanthes trifoliata** L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890.

Pleistocene: Montreal, Canada.

**MEZONEURUM** Desfontaines. Mem. Mus. Paris, vol. iv, p. 245, 1818.

**Mezoneurum bridgetonense** Hollick.

*Mezoneurum bridgetonense* Hollick. Bull. Torr. Bot. Club, vol. xxiii, p. 49, pl. cclviii, f. 1-7, 1896.

Pleistocene?: Bridgeton, New Jersey.

**MICROZAMIA** Corda in Reuss. Verst. d. Böhm. Kreidef., abt. ii, p. 85, 1846.

**Microzamia gibba** (Reuss) Corda in Reuss. Verst. d. Böhm. Kreidef. abt. ii, p. 85, 1846; Newby., Fl. Amboy Clays, p. 45, pl. xii, f. 6, 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**MIMOSITES** Bowerbank. Hist. Foss. Fr. and Seeds London clay, p. 140, 1840.

**Mimosites linearis**\* (Lx.) n. comb.

*Mimosites linearifolius* Lx. Tert. Fl., p. 300, pl. lix, f. 7, 1878.

*Cesalpinia?* *linearis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874].

[\*Non *M. linearis* Engelh., 1894.]

Green River group: Florissant, Colorado.

**MONIMOSOPS** Saporta. Prod. Fl. Foss. d. Sézanne: Mem. Soc. Geol. d. France, 2d ser., vol. vii, p. 361, 1868.

?**Monimiopsis amboræfolia** Sap. Foss. Fl. d. Sézanne, p. (73) 361, pl. (viii) xxix, f. 13, 1868; Ward, Bull. U. S. Geol. Surv. no. 37, p. 51, pl. xxv, f. 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

?**Monimiopsis fraterna** Sap. Fl. Foss. d. Sézanne, p. (74) 362, pl. (viii) xxix, f. 14, 1868; Ward, Bull. U. S. Geol. Surv. no. 37, p. 52, pl. xxv, f. 3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**MORICONIA** Debey and Ettingshausen. Urweltlichen Acrobryen v. Aachen: Denkschr. Wien. Akad., vol. xvii, p. 339 [59], 1859.

**Moriconia cyclotoxon** Deb. and Ett. *Urweltlichen Acrobryen v. Aachen* (Denkschr. Wien. Akad., vol. xvii, p. 239), p. 59, pl. vii, f. 23-27, 1859; Newby., *Fl. Amboy Clays*, p. 55, pl. x, f. 11-21, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**MORUS** (Tournefort) Linnæus. *Syst.*, ed. i, 1735.

**Morus affinis** Lx. *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.* 1871, suppl., p. 11, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group ? : Evanston, Wyoming.

**Morus** sp., Hollick. *Bull. Torr. Bot. Club*, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

*Muscites Sternbergianus* Dunk. = *Sphenolepidium Sternbergianum*.

**MUSOPHYLLUM** Göppert. *Tertiärlfl. d. Insel Java*, p. 39, 1854.

**Musophyllum complicatum** Lx. *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 418, 1873 [1874]; *Tert. Fl.*, p. 96, pl. xv, f. 1-6, 1878.

Green River group?: Green River Station Wyoming?

Laramie group: Golden, Colorado.

**MYRICA** DeCandolle. *Ex. Guill. in Dict. Class. Hist. Nat.*, vol. xi, pp. 378, 401, 1826.

**Myrica acuminata** Ung. *Synop. Pl. Foss.*, p. 214, 1845; Lx., *Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.*, p. 411, 1873 [1874]; *Tert. Fl.*, p. 130, pl. xvii, f. 1-4, 1878.

Green River group: Florissant, Colorado; mouth of White River, Utah.

**Myrica acuta** Hollick in Newby. *Fl. Amboy Clays*, p. 65, pl. xlii, f. 35, 1895 [1896].

Amboy clay: No location.

**Myrica alkalina** Lx. *Cret. and Tert. Fl.*, p. 149, pl. xlvA, f. 10-15, 1883.

Green River group: Alkali Station, Wyoming.

**Myrica amaygdalina** Sap. *Ann. d. Sci. Nat.*, 5th ser., bot., vol. ix, p. 21 [153], pl. i, f. 8-10, 1867; Lx., *Cret. and Tert. Fl.*, p. 147, pl. xxvi, f. 1-4, 1883.

Green River group: Florissant, Colorado.

*Myrica ambigua* Lx. = *Celastrinites ambiguus*.

**Myrica aspera** Lx. *Fl. Dak. Gr.*, p. 66, pl. ii, f. 11, 1892.

Dakota group: Kansas.

**Myrica banksiæfolia** Ung. *Synop. Pl. Foss.*, p. 214, 1845; Heer, *Fl. Foss. Alask.*, p. 28, pl. ii, f. 11, 1869.

Eocene?: Port Graham, Alaska.

*Bull.* 152—10

**Myrica Bolanderi** Lx. Tert. Fl., p. 133, pl. xvii, f. 17, 1878.

*Ilex undulata*\* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 416, 1873 [1874].

[\**M. undulata*. Preoccupied by *M. undulata* Heer, Fl. Tert. Helv., iii, p. 188, 1859.]

Green River group?: Locality unknown.

**Myrica Brongniarti**? Ett. Tert. Fl., p. 135, pl. xvii, f. 15, 1878.

*Myrica* (*Comptonia*) *Brongniarti*? Ett in Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874].

Green River group: Elko Station, Nevada.

**Myrica brookensis** Font. Potomac Fl., p. 310, pl. cl, f. 11; pl. clvi, f. 10, 1889.

Potomac formation: Near Brooke, Virginia.

*Myrica calicomæfolia* Lx. = *Myrica drymeja*.

**Myrica cinnamomifolia** Newby. Fl. Amboy Clays, p. 64, pl. xxii, f. 9-14, 1895 [1896].

Amboy clay: Woodbridge, South Amboy, New Jersey.

**Myrica Copiana** Lx. Am. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 411, 1873 [1874]; Tert. Fl., p. 131, pl. xvii, f. 5, 1878.

Green River group: Florissant, Colorado.

Eolignitic: Wickliffe, Kentucky.

*Myrica cretacea* Lx. = *Myrica dakotensis*.

**Myrica** (*Comptonia*) **cuspidata** (Lx.) Dn. Trans. Roy. Soc. Canada 1890, vol. viii, p. 80, f. 9, 1890.

*Comptonia cuspidata* Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 10-12, 1882 [1883].

Eocene?: Unga Island, Alaska.

**Myrica dakotensis**\* Lx. Cret. and Tert. Fl., p. 35, pl. iv, f. 9, 1883.

*Myrica cretacea* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 339, pl. iii, f. 4, 1874 [1876].

[\**Myrica cretacea* Lx. Preoccupied by *M. cretacea* Heer, Fl. Quedl.]

Dakota group: Fort Harker, Kansas.

**Myrica Davisii** Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. ii, f. 3, 1892.

Cretaceous: Staten Island.

*Myrica diversifolia* Lx. = *Cratægus flavescens*.

**Myrica drymeja** (Lx.) n. comb.

*Myrica callicomæfolia* Lx. Cret. and Tert. Fl., p. 146, pl. xxvi, f. 5-14, 1883.

*Callicoma microphylla* Ett. Lx., Tert. Fl., p. 246, pl. xliii, f. 2-4, 1878.

*Rhus*? *drymeja* Lx. Ann. Rept., op. cit., p. 416, 1873 [1874].

Green River group: Florissant, Colorado; Elko Station, Nevada.

**Myrica elæanoides** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 5, 1888.

Eolignitic: Wickliffe, Kentucky.

**Myrica emarginata** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 66, pl. xli, f. 2, 1882; in Lx., Fl. Dak. Gr., p. 67, pl. xii, f. 1, 1892; Newby., Fl. Amboy Clays, p. 62, pl. xli, f. 10, 11, 1895 [1896].

Dakota group: Kansas.

Amboy clay: New Jersey?



**Myrica fallax** Lx. Cret. and Tert. Fl., p. 147, pl. xxxii, f. 11-16, 1883.  
Green River group: Florissant, Colorado.

**Myrica fenestrata** Newby. Fl. Amboy Clays, p. 63, pl. xliii, f. 32, 1895  
[1896].

Amboy clay: Sayreville, New Jersey.

**Myrica grandifolia** Hollick = **Myrica Hollicki**.

**Myrica Hollicki** Ward. Am. Journ. Sci., vol. xlv, p. 437, 1893.

*Myrica grandifolia* \*Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. iii,  
f. 1, 1892.

[\*Preoccupied by *M. grandifolia* (Ung.) Schimp. Pal. Vég., vol. ii, p. 559,  
1872.]

Cretaceous: Staten Island.

**Myrica ? idahoensis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv.,  
pt. iii, p. 724, pl. xcix, f. 7, 1898.

Payette formation: Marsh, Idaho.

**Myrica insignis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,  
p. 312, 1874 [1876]; Tert. Fl., p. 135, pl. lxxv, f. 7, 8, 1878.

Green River group: Florissant, Colorado.

**Myrica lanceolata** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv.,  
pt. iii, p. 724, pl. xcix, f. 5, 6, 1898.

Payette formation: Shafer Creek, Boise County, Idaho.

**Myrica latiloba** Heer, var. **acutiloba** Lx. Ann. Rept. U. S. Geol. and  
Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 134, pl. xvii,  
f. 13, 1878.

Green River group: Florissant, Colorado.

**Myrica Lessigiana** Lx. = **Artocarpus Lessigiana**.

**Myrica Lessigii** Lx. = **Artocarpus Lessigiana**.

**Myrica lignitum** (Ung.) Sap. Étud.: Ann. sci. nat. Bot., 5th ser.,  
vol. iv, p. 102, pl. 5, f. 10, 1866.

*Dryandroides lignitum* (Ung.) Ett. Lesquereux, Proc. U. S. Nat. Mus., vol.  
x, p. 41, 1887.

—: Deer Creek coal field, Arizona.

**Myrica longa** (Heer.) Lx. Fl. Dak. Gr., p. 67, pl. iii, f. 1-6, 1892.

*Proteoides longus* Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 110, pl. xxxi, f. 4, 5;  
xxix, f. 8b, 1874; Du., Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 22, pl. ii, f.  
8, 1882 [1883].

Dakota group: Kansas; Fork of Peace River, Northwest Territory.

**Myrica Ludwigii** Schimp. Pal. Vég., vol. ii, p. 545, 1872; Lx., Bull.  
U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876]; Ann.  
Rept. U. S. Geol. and Geogr. Surv. Terr., p. 311, 1874 [1876]; Tert.  
Fl., p. 133, pl. lxxv, f. 9, 1878.

Green River group: Mouth of White River.

**Myrica Newberryana** Hollick in Newby. Fl. Amboy Clays, p. 63,  
pl. xliii, f. 5, 1895 [1896].

Amboy clay: South Amboy, New Jersey.

**Myrica nigricans** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.  
1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 132, pl. xvii, f. 9-12, 1878.

Green River group: Green River, Wyoming.

- Myrica obliqua** Kn. in Lx. Fl. Dak. Gr., p. 68, pl. xlv, f. 16, 1892.  
Dakota group: Kansas.
- Myrica obscura** Lx. Cret. and Tert. Fl., p. 145, pl. xxxii, f. 8-10, 1883.  
Green River group: Florissant, Colorado.
- Myrica obtusa** Lx. Cret. Fl., p. 63, pl. xxix, f. 10, 1874.  
Dakota group: Kansas.
- Myrica partita** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 134, pl. xvii, f. 14, 1878.  
Green River group: Elko Station, Nevada.
- Myrica (Comptonia) parvula** Heer. Fl. Foss. Aret., vol. vii, p. 20, pl. lv, f. 1-3, 1883; Newby., Fl. Amboy Clays, p. 63, pl. xix, f. 6, 1895 [1896].  
Amboy clay: Sayreville, New Jersey.
- Myrica polymorpha** Schimp., Études, ii, p. 220, 1868; Lx. Cret. and Tert. Fl., p. 146, pl. xxv, f. 1, 2, 1883.  
Green River group: Florissant, Colorado.
- Myrica (Comptonia) premissa** (Lx.) Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 222, 1894.  
Comptonia premissa Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 13, 1882 [1883].  
Eocene?: Unga Island, Alaska.
- Myrica raritanensis** Hollick In Newby. Fl. Amboy Clays, p. 65, pl. xlii, f. 34, 1895 [1896].  
Amboy clay: No location.
- Myrica rigida** Lx. Cret. and Tert. Fl., p. 145, pl. xxv, f. 3, 4, 1883.  
Green River group: Florissant, Colorado.
- Myrica Saportana** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 385, 1875 [1876]. [Not afterwards mentioned.]  
——: Middle Park, Colorado.
- Myrica salicina** Ung. Gen. et Sp. Pl. Foss., p. 396, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872].  
——: Green River, Wyoming.
- Myrica Schimperii** Lx. Fl. Dak. Gr., p. 66, pl. ii, f. 12, 1892.  
Dakota group: Kansas.
- Myrica Scottii** Lx. Cret. and Tert. Fl., p. 147, pl. xxxii, f. 17, 18, 1883.  
Green River group: Florissant, Colorado.
- Myricæ ? semina** Lx. Cret. Fl., p. 63, pl. xxvii, f. 4, 4a, 1874.  
Dakota group: Decatur, Nebraska.
- Myrica Sternbergii** Lx. Cret. and Tert. Fl., p. 35, 1883.  
Dakota group: Kansas.
- Myrica Studeri ?** Heer. Fl. Tert. Helv., vol. ii, p. 36, pl. lxx, f. 21-24, 1856; Lx., Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.  
Eocene?: White River, Dakota.
- Myrica Torreyi** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1872 [1873]; Tert. Fl., p. 129, pl. xvi, f. 3-10, 1878.  
Laramie group: Black Buttes, Wyoming.  
Montana formation: Point of Rocks, Wyoming.

**Myrica Torreyi minor** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874].

——: Sand Creek, Colorado.

**Myrica ? trifoliata** Newby. Undistributed plates, xiv, f. 2.

Dakota group: Whetstone Creek, New Mexico.

**Myrica undulata** (Heer) Schimp. Pal. Vég., ii, p. 556, 1872; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 131, pl. xvii, f. 6-8, 1878.

Dryandroides undulata Heer. Fl. Tert. Helv., vol. iii, p. 188, 1859.

Green River group: Elko Station, Nevada.

**Myrica Ungerii** Heer. Fl. Tert. Helv., vol. ii, p. 35, pl. lxx, f. 7, 8, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 27, 1888.

Miocene: Spanish Peak, California.

**Myrica vindobonensis** (Ett.) Heer. Fl. Foss. Alask., p. 27, pl. iii, f. 4, 5, 1869.

Dryandra vindobonensis Ett. Tert. Fl. v. Wien., p. 18, pl. iii, f. 6, 1851.

Eocene?: Neulutschik, Alaska.

**Myrica Zachariensis** Sap. Études, i, pt. 2: Ann. d. sci. nat. Bot., 4th ser., vol. xix, p. 201 [47], pl. v, f. 1, 1863; Lx., Cret. and Tert. Fl., p. 146, pl. xxv, f. 1, 2; pl. xlva, f. 6-9, 1883.

Green River group: Florissant, Colorado; Alkali Station, Wyoming.

**Myrica** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: South Amboy, New Jersey.

**MYRICÆPHYLLUM** Fontaine. Potomac Fl., p. 315, 1889.

**Myricæphyllum dentatum** Font. Potomac Fl., p. 316, pl. clvi, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

**MYRSINE** Linnæus. Syst., ed. i, 1735.

**Myrsine borealis** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 81, pl. xxiv, f. 7b, 8; xxvii, f. 1b; xlv, f. 5a; xlvi, f. 19, 20, 1882; Newby., Fl. Amboy Clays, p. 122, pl. xxiv, f. 4-6, 1895 [1896].

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

**Myrsine crassa** Lx. Fl. Dak. Gr., p. 114, pl. lii, f. 2, 3, 1892.

Dakota group: Kansas.

**Myrsine elongata** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. clxxvii, f. 2, 1894; Newby., Fl. Amboy Clays, p. 123, pl. xxii, f. 1-3, 1895 [1896].

Cretaceous: Lloyds Neck, Long Island.

Amboy clay: South Amboy, New Jersey.

**Myrsine latifolia** Lx. Cret. and Tert. Fl., p. 173, pl. xxxviii, f. 16, 1883.

Green River group: Florissant, Colorado.

**Myrsine oblongata** Hollick in Newby. Fl. Amboy Clays, p. 122, xlii, f. 15, 1895 [1896].

Amboy clay: Locality unknown.

**Myrsine** sp., Hollick in Ries. School of Mines Quart., vol. xv, no. 4, p. 354, 1894.

Cretaceous: Little Neck, Northfield Bay, Long Island.

**Myrsinites** ? **Gaudini** Lx. Fl. Dak. Gr., p. 115, pl. lii, f. 4, 1892.

Dakota group: Kansas.

**MYRTOPHYLLUM** Heer. Neue Denkschr. Schw. Ges., vol. xxiii, mem. 2, p. 22, 1869.

*Myrtophyllum* Geinitzi Heer = *Eucalyptus* Geinitzi.

**Myrtophyllum** **Warderi** Lx. Fl. Dak. Gr., p. 136, pl. liii, f. 10, 1892.

Dakota group, Kansas.

**MYRTUS** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Myrtus oregonensis** Lx. Cret. and Tert. Fl., p. 254, pl. lviii, f. 10, 1883.

Miocene: Corral Hollow, California.

**NAGEIOPSIS** Fontaine. Potomac Fl., p. 194, 1889.

**Nageiopsis acuminata** Font. Potomac Fl., p. 201, pl. lxxxv, f. 11, 1889.

Potomac formation: Near Telegraph Station, Virginia.

**Nageiopsis angustifolia** Font. Potomac Fl., p. 202, pl. lxxxvi, f. 8, 9; lxxxvii, f. 2-6; lxxxviii, f. 1, 3, 4, 6-8; lxxxix, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, near Brooke, and Fredericksburg, etc., Virginia.

**Nageiopsis crassicaulis** Font. Potomac Fl., p. 198, pl. lxxix, f. 2-6; lxxxii, f. 1; lxxxiv, f. 3, 9, 11, 1889.

Potomac formation: Near Potomac Run, Fredericksburg, Kankeys, near Brooke, and Dutch Gap Canal, Virginia.

**Nageiopsis decrescens** Font. Potomac Fl., p. 199, pl. lxxvii, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Nageiopsis heterophylla** Font. Potomac Fl., p. 201, pl. lxxxiv, f. 4; lxxxvi, f. 6, 7; lxxxviii, f. 2, 5, 1889.

Potomac formation: Fredericksburg, and near Dutch Gap Canal, Virginia.

**Nageiopsis inæquilateralis** Font. Potomac Fl., p. 200, pl. lxxxv, f. 6, 1889.

Potomac formation: Kankeys.

**Nageiopsis latifolia** Font. Potomac Fl., p. 198, pl. lxxxii, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, and near Potomac Run, Virginia.

**Nageiopsis longifolia** Font. Potomac Fl., p. 195, pl. lxxv, f. 1; lxxvi, f. 2-6; lxxvii, f. 1, 2; lxxviii, f. 1-5; lxxxix, f. 7; lxxxv, f. 1, 2, 8, 9, 1889.

Knoxville beds: Tehama County, California.

Potomac formation: Fredericksburg, Kankeys, near Telegraph Station, near Brooke, Deep Bottom, and Dutch Gap Canal, Virginia.

**Nageiopsis microphylla** Font. Potomac Fl., p. 201, pl. lxxxiv, f. 6; lxxxv, f. 14; lxxxvi, f. 1-3, 5, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Dutch Gap Canal, Virginia.

**Nageiopsis obtusifolia** Font. Potomac Fl., p. 200, pl. lxxxv, f. 7, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Nageiopsis ovata** Font. Potomac Fl., p. 199, pl. lxxvii, f. 4; lxxx, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Nageiopsis recurvata** Font. Potomac Fl., p. 197, pl. lxxv, f. 2; lxxix, f. 4; lxxx, f. 3, 1889.

Potomac formation: Fredericksburg, and Dutch Gap Canal, Virginia.

**Nageiopsis subfalcata** Font. Potomac Fl., p. 203, pl. clxviii, f. 4, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Nageiopsis zamioides** Font. Potomac Fl., p. 196, pl. lxxix, f. 1, 3; lxxx, f. 1, 2, 4, lxxxi, f. 1-6, 1889.

Potomac formation: Fredericksburg, and Dutch Gap Canal, Virginia.

**NAJADOPSIS** Heer. Fl. Tert. Helv., vol. i, p. 104, 1855.

**Najadopsis rugulosa** Lx. Cret. and Tert. Fl., p. 142, pl. xxiii, f. 7, 1883.

Green River group: Florissant, Colorado.

**NEGUNDOIDES** Lesquereux. Am. Journ. Sci., vol. xvi, p. 101, 1868.

**Negundoides acutifolia** Lx. Am. Journ. Sci., vol. xvi, p. 101, 1868; Cret. Fl., p. 97, pl. xxi, f. 5, 1878.

Dakota group: Lancaster, Nebraska.

**NEGUNDO** Moench. Mett., p. 334, 1794.

**Negundo triloba** Newby. Later Extinct Floras, p. 57, 1868.

Fort Union group: Fort Union, North Dakota.

**NELUMBIIUM** Jussieu. Gen., p. 68, 1789.

*Nelumbium Lakesii* Lx. = *Nelumbium Lakesianum*.

**Nelumbium Lakesianum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 403, 1873 [1874].

*Nelumbium Lakesii* Lx. Tert. Fl., p. 252, pl. xlvi, f. 1, 2, 1878.

Denver group: Golden and Sedalia, Colorado.

**Nelumbium pygmæum** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 87, f. (in text) 22, 1890.

Eocene?: Similkameen River, British Columbia.

**Nelumbium saskatchuense** Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Belly River series?: Canada [exact location not given].

**Nelumbium tenuifolium** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 402, 1873 [1874]; Tert. Fl., p. 253, pl. xlvi, f. 3, 1878.

Laramie group: Sand Creek, Colorado.

*Nelumbium* sp., James = *Cycadeoidea mirabilis*.

**NELUMBO** Adanson. Fam. Pl., vol. ii, p. 76, 1763.

**Nelumbo Dawsoni** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 309, 1894.

*Brasenia antiqua* \* Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 15, f. (in text), 1885 [1886].

[\* *Brasenia antiqua* Dn., 1886, preoccupied by *B. antiqua* Newby., 1883.]

Belly River series: Medicine Hat.

**Nelumbo laramiensis** Hollick. Bull. Torr. Bot. Club, vol. xxi, no. 7, p. 307, fig. in text, 1894.

Laramie group: Florence, Colorado.

*Neuropteris angulata* Newby. = *Trapa microphylla*?

**Neuropteris castor** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 14, 14a, 1882 [1883].

Upper Cretaceous: Vancouver Island.

**Neuropteris civica** Dn. Trans. Roy. Soc. Canada, 2d ser., vol. i, sec. iv, p. 141, pl. iv, f. 2, 1895-96.

Eocene: Burrards Inlet, Vancouver, British Columbia.

**NILSONIA** Brongniart. Ann. d. Sci. Nat., vol. iv, p. 218, 1825.

**Nilsonia lata** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 15 bis, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

**NÖGGERATHIOPSIS** Feistmantel. Foss. Fl. Gondwana Syst.: Mem. Geol. Surv. India, ser. xii, vol. iii, pt. 1, p. 23, 1879.

**Nöggerathiopsis Robinsi** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 7, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver Island.

**NORDENSKIÖLDIA** Heer. Mioc. Fl. and Fauna Spitzb.: Kongl. Svenska Vetensk.-Acad. Handl., vol. viii, no. 7 (Fl. Foss. Arct., vol. ii, abt. iii), p. 65, 1870.

**Nordenskiöldia borealis** Heer. Fl. Foss. Arct., vol. ii, abt. iii, p. 65, pl. vii, f. 1-13, 1870; Lx., Fl. Dak. Gr., p. 219, pl. xlv, f. 6, 1892; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 71, pl. x, f. 6, 1889 [1890].

Dakota group: Kansas.

Eocene?: Mackenzie River, British Columbia.

*Nymphæa*? sp. Lx. = *Castalia* sp.

**NYSSA** Gronovius ex Linnæus. Syst., ed. i, 1735.

**Nyssa arctica** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 477, pl. xliii, f. 12c; pl. i, f. 5-7, 1869; Lx., Proc. U. S. Nat. Mus., vol. v, p. 447, 1882 [1883].

Eocene?: Unga Island, Alaska.

**Nyssa Buddiana** Ward. Bull. U. S. Geol. Surv., no. 37, p. 53, pl. xxv, f. 4, 1887.

Laramie group: Hodges Pass, Wyoming.

**Nyssa caroliniana** Poir. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Nyssa complanata** Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 153, 1861.

——: Brandon, Vermont.

**Nyssa europæa** Ung. Syn. Pl. Foss., p. 228, 1845; Lx., Bull. Mus. Comp. Zool., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

**Nyssa lanceolata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]; Tert. Fl., p. 245, pl. xxxv, f. 6 [non f. 5], 1876.

Denver group: Golden, Colorado?

Laramie group: White Oaks, New Mexico.

**Nyssa lanceolata** Lx. [Tert. Fl., pl. xxxv, f. 5 (non f. 6)] = *Juglans rugosa*.

**Nyssa lævigata** Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 151, 1861.

——: Brandon, Vermont.

**Nyssa microcarpa** Lx. Am. Journ. Sci., vol. xxxii, p. 361, 1861; Geol. Vt., vol. ii, p. 717, f. 154, 1861.

——: Brandon, Vermont.

**Nyssa? racemosa** nom. nov.

*Sabalites? fructifer* Lx. Ex. p. Tert. Fl. p. 114, pl. xi, f. 3a [non f. 3], 1878.

Denver group: Golden, Colorado.

**Nyssa Snowiana** Lx. Fl. Dak. Gr., p. 126, pl. lii, f. 11, 1892.

Dakota group: Kansas.

**Nyssa uniflora** Walt. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Nyssa vetusta** Newby. Later Extinct Floras, p. 11, 1868.

Dakota group: Blackbird Hill, Nebraska.

**OLEA** Linnæus. Syst., ed. i, 1735.

**Olea præmissa** Lx. Cret. and Tert. Fl., p. 168, pl. xxxiii, f. 1, 1883.

Green River group: Florissant, Colorado.

**OLEANDRA** Cavanilles. Prael. n. 623, 1801.

**Oleandra arctica** Heer. Fl. Foss. Arct., vol. iii, p. 38, pl. xii, f. 3-11, 1874; Newby., Am. Journ. Sci., vol. xli, p. 201, pl. xiv, f. 9, 1891.

Kootanie: Great Falls, Montana.

**ONOCLEA** Linnæus. Amoen. ac., 1751.

**Onoclea fecunda** (Lx.) n. comb.

*Caulinites fecunda* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1872 [1873]; Tert. Fl., p. 101, pl. xiv, f. 1-3, 1878.

Laramie group: Erie, Colorado.

**Onoclea sensibilis** Newby. Later Extinct Floras, p. 39, 1868; Ills., Cret. and Tert. Fl., pl. viii, f. 1; ix, f. 1-5, 1878.

Fort Union group: Fort Union, North Dakota; Porcupine Creek; North Saskatchewan.

**ONYCHIOPSIS** Yokoyama. Journ. Col. Sci. Japan, vol. iii, p. 26, 1890.

**Onychiopsis Mantelli** (Brongn.) Seward. Wealden Fl., p. 41, 1894.  
*Sphenopteris Mantelli* Brongn. Prod. Hist. Vég. Foss., p. 50, 1828; Hist. Vég. Foss., p. 170, 1828; Font., Potomac Fl., p. 91, pl. 1, f. 1, 2, 1889.  
 Potomac formation: Baltimore, Maryland.

**OPEGRAPHIA** Persoon in Usteri n. Ann., I., p. 23, 1794.

**Opegrapha antiqua** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 390, 1872 [1873]; Tert. Fl., p. 36, pl. i, f. 1-1c, 1878.  
 Laramie group: Black Buttes, Wyoming.

**OPHIOGLOSSUM** (Tournefort) Linnaeus. Gen. Pl., p. 332, 1737.

*Ophioglossum Alleni* Lx. = *Tmesipteris Alleni*.

**Ophioglossum granulatum** Heer. Fl. Foss. Arct., vol. vii, p. 8, pl. lvii, f. 8, 9, 1883; Fl. Amboy Clays, p. 43, pl. ix, f. 11-13, 1895 [1896].  
 Amboy clay: No locality given.

**OREODAPHNE** Nees and Martius. Ex Nees in Linnæa, vol. viii, p. 39, 1833.

**Oreodaphne cretacea** Lx. Cret. Fl., p. 84, pl. xxx, f. 5, 1874.  
 Dakota group: Kansas.

**Oreodaphne Heerii** Gaud. Neue Denkschr. Schw. Gesel., vol. xvi, p. 35, 1858; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 30, 1888.  
 Eocene: Lassen County, California.

**Oreodaphne lith(s)æformis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 30, pl. xiv, f. 4, 1888.  
 Eocene?: Lassen County, California.

**OREODOXITES** Göppert. Foss. Fl. d. Perm. Form., p. 146, 1864.

**Oreodoxites plicatus** Lx. Cret. and Tert. Fl., p. 122, pl. xviii, f. 1-4, 1883.

Denver group: Golden, Colorado.

**ORYZOPSIS** Michaux. Fl. Bor. Am., vol. i, p. 51, 1803.

**Oryzopsis asperifolia** Mx. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 331, 1890.

Pleistocene: Greens Creek, Ottawa River, Canada.

**OSMUNDA** Linnaeus. Gen. Pl., p. 322, 1737.

**Osmunda affinis** Lx. Tert. Fl., p. 60, pl. iv, f. 1, 1878.

*Pteris affinis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 392, 1873 [1874].

*Pteris anceps* Lx. Ann. Rept., op. cit., p. 376, 1872 [1873].

Denver group: Golden, Colorado.

**Osmunda dicksonioides** Font. Potomac Fl., p. 146, pl. xli, f. 5; lviii, f. 9; lix, f. 1, 4, 8, 9, 11; lx, f. 2, 4, 5, 9; lxi, f. 1, 2, 1889.

Potomac formation: Near Potomac Run, Virginia.

Kootanie: Great Falls, Montana.

Knoxville beds: Tehama County, California.



**Osmunda dicksonioides latipennis** Font. Potomac Fl., p. 147, pl. lx, f. 1, 3; lxi, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Osmunda Doroschkiana** Göpp. Abhandl. d. Schles. Gesel. f. Vaterl.-Cult., pt. ii, p. 203, 1861.

*Osmunda Torelli* Heer. Fl. Foss. Arct., vol. v, abt. iii, p. 19, pl. i, f. 4, 1878.

Lx., Proc. U. S. Nat. Mus., vol. v, p. 444, 1882 [1883].

*Hemitelites Torelli* Heer. Op. cit., vol. ii, abt. iv, p. 462, 1869.

*Pecopteris Torrellii* Heer. Op. cit., vol. i, p. 88, pl. i, f. 15, 1868.

Eocene?: Unga Island, Alaska.

*Osmunda major* Lx. = *Asplenium subsimplex*.

**Osmunda Obergiana** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 98, pl. xxvi, f. 9-9b; xxxii, f. 7a, 1874; Ward, 15th Ann. Rept. U. S. Geol. Surv., p. 390, 1895.

Potomac formation: ———?

**Osmunda sphenopteroides** Font. Potomac Fl., p. 145, pl. xxv, f. 13, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

*Osmunda Torelli* Heer = *Osmunda Doroschkiana*.

**OSTRYA** Scopoli. Fl. Carn., p. 414, 1760.

**Ostrya betuloides** Lx. Cret. and Tert. Fl., p. 151, 1883.

Green River group: Florissant, Colorado.

**Ostrya Walkeri?** Heer. Vierteljahrsschrift d. Naturf. Gesells. Zürich, vol. xi, p. 276, 1866; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.

Pleistocene?: Wytheville, Virginia.

**Ostrya virginica** (Mill.) B. S. P. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

**OXYCOCCUS** Adanson. Pl. Fam., vol. ii, pl. 164, 1763.

**Oxycoccus palustris** Pers. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 72, 1896.

Pleistocene: Scarboro Heights, Ontario.

**OTTELIA** Pers. Syn., vol. i, p. 400, 1805.

**Ottelia americana** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 300, 1874 [1876]; Tert. Fl., p. 98, pl. lxi, f. 8, 1878.

Montana formation: Point of Rocks, Wyoming.

**PAGIOPHYLLUM** Heer. Contr. Fl. Foss. du Portugal, p. 11, 1881.

**Pagiophyllum dubium** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 271, pl. xxxix, f. 2-11, 1893.

Trinity division: Glenrose, Texas.

**Pagiophyllum** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 14, 1892.

Kootanie: Anthracite? British Columbia.

**PALÆANTHUS** Newberry. Bull. Torr. Bot. Club, vol. xiii, p. 37, 1886.  
**Palæanthus (Williamsonia) problematicus** Newby. Fl. Amboy  
Clays, p. 125, pl. xxxv, f. 1-9, 1895 [1896].

Williamsonia problematica (Newby.) Ward. 15th Ann. Rept. U. S. Geol.  
Surv., p. 382, 1895.

Amboy clay: New Jersey.

Cretaceous: Marthas Vineyard.

**PALÆOCASSIA** Ettingshausen. Sitzb. Wien. Akad., vol. lv, abt. i,  
p. 261, 1867.

**Palæocassia laurinea** Lx. Fl. Dak. Gr., p. 147, pl. lxiv, f. 12, 1892.  
Dakota group: Kansas.

**PALEOHILLIA** Knowlton. Bull. Torr. Bot. Club., vol. xxii, p. 387,  
1895.

**Paleohillia arkansana** Kn. Bull. Torr. Club, vol. xxii, p. 387, f. (in  
text) 1-3, 1895.

Trinity division: Six miles northwest of Center Point, Howard  
County, Arkansas.

**PALIURUS** Tournefort. Ex. Miller Gard. Diet., ed. vi. 1752.

**Paliurus affinis** ? Heer. Fl. Foss. Arct., vol. vii, p. 42, 1883; Hollick,  
Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. ii, f. 12, 14, 18, 19; pl. iii, f. 7,  
1892.

Cretaceous: Staten Island.

**Paliurus anceps** Lx. Fl. Dak. Gr., p. 166, pl. xxxv, f. 4, 1892.  
Dakota group: Kansas.

**Paliurus Colombi** Heer. Fl. Foss. Arct., vol. i, p. 122, pl. xvii, f. 2d;  
pl. xix, f. 2-4, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv.  
Terr., p. 288, 1871 [1872]; Tert. Fl., p. 273, pl. I, f. 13-17, 1878.

Fort Union group: Yellowstone River, Montana.

Denver group?: Creston, Wyoming.

Laramie group?: Carbon, Wyoming.

Miocene: John Day Valley, Oregon.

Canadian upper Laramie: Great Valley, British Columbia.

**Paliurus coloradensis** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 55,  
1888.

Denver group: Golden, Colorado.

**Paliurus cretaceus** Lx. Fl. Dak. Gr., p. 165, pl. xxxv, f. 3, 1892.  
Dakota group: Kansas.

**Paliurus florissant** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.  
Terr., p. 416, 1873 [1874]; Tert. Fl., p. 274, pl. I, f. 18, 1878.

Green River group: Florissant, Colorado.

**Paliurus intigrifolius** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 57,  
pl. clxxvii, f. 5, 8, 12, 1894.

Clay marl [Upper Cretaceous]: Cliffwood, New Jersey?

Cretaceous: Lloyds Neck, Glen Cove, and Oak Neck, Long Island.

**Paliurus membranaceus** Lx. Am. Journ. Sci., vol. xlv, p. 101, 1868; Cret. Fl., p. 108, pl. xx, f. 6, 1874; Fl. Dak. Gr., p. 167, pl. xxxv, f. 5, 1892.

Dakota group: Decatur, Nebraska; Kansas.

Cretaceous: Marthas Vineyard, Massachusetts.

**Paliurus montanus** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, 1885 [1886].

Mill Creek series: North Fork Old Man River.

**Paliurus neillii** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 62, pl. xi, f. 44, 45, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Paliurus obovatus** Lx. Fl. Dak. Gr., p. 165, pl. xxxv, f. 6, 1892.

Dakota group: Kansas.

**Paliurus ovalis** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 14, pl. iv, f. 4, 8, 1885 [1886]; Newby., Fl. Amboy Clays, p. 107, pl. xxiii, f. 8, 9, 1895 [1896]; Lx., Fl. Dak. Gr., p. 166, p. xxxv, f. 7, 1892.

Mill Creek series: Mill Creek.

Amboy clay: New Jersey.

Dakota Group: Kansas.

**Paliurus orbiculatus** Sap. Études iii, Ann. Sci. Nat., 5th ser., vol. ix, p. 182, pl. vii, f. 6, 1867; Lx., Cret. and Tert. Fl., p. 188, pl. xxxviii, f. 12, 1883.

Green River group: Florissant, Colorado.

**Paliurus Pealei** Ward. Bull. U. S. Geol. Surv., no. 37, p. 76, pl. xxxiii, f. 12-14, 1887.

Fort Union group?: Little Missouri River, Montana.

**Paliurus pulcherrimus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 75, pl. xxxiii, f. 11, 1887.

Laramie group: Carbon, Wyoming.

**Paliurus zizyphoides** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873]; Tert. Fl., p. 274, pl. li, f. 1-6, 1878.

Denver group: Golden, Colorado.

Laramie group: Erie, and Sand Creek, Colorado; Black Buttes, Wyoming.

*Palmacites goldianus* Lx.=*Geonomites goldianus*.

**PALMOCARPON** Lesquereux. Tert., Fl., p. 119, 1878.

*Palmocarpum commune* Lx.=*Palmocarpum palmarum*.

**Palmocarpum compositum** Lx. Tert. Fl., p. 119, pl. xi, f. 4, 1878.

*Carpolithes compositus* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 16, 1871 [1872].

Laramie group: Placer Mountain, New Mexico.

**Palmocarpum corrugatum** Lx. Tert. Fl., p. 121, pl. xi, f. 10, 11, 1878.

Denver group: Golden, Colorado.

**Palmocarpum? globosum** Lx. Cret. and Tert. Fl., p. 144, pl. xxiv, f. 3, 1883.

Green River group: Florissant, Colorado.

**Palmocarbon lineatum** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

**Palmocarbon mexicanum** Lx. Tert. Fl., p. 119, pl. xi, f. 5, 1878.

Carpolithes mexicanus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 17, 1871 [1872].

Laramie group: Placer Mountain, New Mexico.

**Palmocarbon palmarum** (Lx.) n. comb.

Palmocarbon commune Lx. Tert. Fl. p. 119, pl. xiii, f. 4-7, 1878.

Carpolithes palmarum Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 13, 1871 [1872].

Denver group: Golden, Colorado (very common).

Laramie group: Raton Mountains, New Mexico; Evanston and Black Buttes, Wyoming; Morrison and Golden, Colorado.

**Palmocarbon subcylindricum** Lx. Tert. Fl., p. 121, pl. xi, f. 12, 1878.

Denver group: Golden, Colorado.

**Palmocarbon truncatum** Lx. Tert. Fl., p. 120, pl. xi, f. 6-9, 1878.

——: Golden, Colorado.

**PALMOXYLON** Schenk. Engler's bot. Jahrb., vol. iii, p. 486, 1882.

**Palmoxylon cellulolum** Kn. Proc. U. S. Nat. Mus., vol. xi, p. 90, pl. xxx, f. 2, 1888.

——: Rapides Parish, Louisiana.

**Palmoxylon Quenstedti** Felix. Foss. Hölz. Westindiens, p. 25, pl. iv, f. 4, 1883; Kn., Proc. U. S. Nat. Mus., vol. xi, p. 90, pl. iv, f. 4, 1888.

——: Rapides Parish, Louisiana.

**PARROTIA** U. A. Meyer. Verz. Pfl. Canc., p. 46, 1831.

**Parrotia Canfieldi** Lx. Fl. Dak. Gr., p. 141, pl. xxx, f. 6, 1892.

Dakota group: Kansas.

**Parrotia grandidentata** Lx. Fl. Dak. Gr., p. 140, pl. xxxix, f. 2-4, 1892.

Dakota group: Kansas.

**Parrotia? Winchelli** Lx. Fl. Dak. Gr., p. 140, pl. xxix, f. 5, 6, 1892.

Dakota group: Minnesota; Kansas.

**PASSIFLORA** Linnaeus. Syst., ed. i, 1735.

**Passiflora antiqua** Newby. Fl. Amboy Clays, p. 109, pl. xxiii, f. 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**PECOPTERIS** Brongniart. Hist. Vég. Foss., p. 267, 1828.

**Pecopteris angustipennis** Font. Potomac Fl., p. 87, pl. xxi, f. 10, 1889.  
Potomac formation: Near Dutch Gap Canal, Virginia.

**Pecopteris brevipennis** Font. Potomac Fl., p. 86, pl. xxi, f. 1-3, 1889.  
Potomac formation: Near Potomac Run, and near Dutch Gap Canal, Virginia.

*Pecopteris Browniana* Dunk. = *Cladophlebis Browniana*.

**Pecopteris constricta** Font. Potomac Fl., p. 86, pl. xx, f. 1, 2, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

*Pecopteris Dunkeri* Schimp. = *Cladophlebis Dunkeri*.

**Pecopteris microdonta** Font. Potomac Fl., p. 85, pl. xix, f. 8; xx, f. 5, 11, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

**Pecopteris montanensis** Font. Proc. U. S. Nat. Mus., vol. xv, p. 492, pl. lxxxiii, f. 1, 1a, 1892.

Kootanie: Great Falls, Montana.

*Pecopteris nebraskana* ? Heer = *Cyathites nebraskana*.

**Pecopteris ovatodentata** Font. Potomac Fl., p. 85, pl. xv, f. 8; xxii, f. 12; xxii, f. 1, 1889.

—: Fredericksburg and Dutch Gap Canal, Virginia.

**Pecopteris pachyphylla** Font. Potomac Fl., p. 88, pl. xxvi, f. 4, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Pecopteris (Phegopteris) sepulta** Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Eocene: Green River, Wyoming.

**Pecopteris (Pteris?) socialis** Heer. Fl. Foss. Aret., vol. vi, pt. ii, p. 34, pl. vii, f. 4, 1882; Font., Potomac Fl., p. 87, pl. xxi, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

**Pecopteris strictinervis** Font. Potomac Fl., p. 84, pl. xiii, f. 6-8; xix, f. 9; xx, f. 3; xxii, f. 13; clxx, f. 5, 6, 1889.

Potomac formation: Fredericksburg, Virginia; Baltimore, Maryland.

Knoxville beds: Tehama County, California.

*Pecopteris Torelli* Heer = *Osmunda Doroschkiana*.

**Pecopteris virginiensis** Font. Potomac Fl., p. 82, pl. viii, f. 1-7; ix, f. 1-6; xxiv, f. 2; clxix, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, Fredericksburg, Potomac Run, near Brocke, and near Telegraph Station, Virginia; Baltimore, Maryland.

**Pecopteris** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. i, p. 70, 1873.

Cretaceous: Hornby Island, British Columbia.

**Pecopteris** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

**PERSEA** Gartner. Fr. and Sem., vol. iii, p. 222, 1805.

**Persea Borbonia** (L.) Spreng. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

*Laurus carolinensis* Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 426, pl. K, f. 10, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

Miocene?: Bridgeton, New Jersey.

**Persea brossiana** Lx. Ann. Rept., op. cit., p. 407, 1873 [1874].

Laurus brossiana Lx. Tert. Fl., p. 216, pl. xxxvi, f. 9, 1878.

Denver beds: Mount Bross, Middle Park, Colorado.

**Persea Dilleri** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 27, pl. xiii, f. 2-4, 1888.

Miocene: Shasta County, California.

**Persea Hayana** Lx. Fl. Dak. Gr., p. 103, pl. xvi, f. 6, 1892.

Dakota group: Kansas.

**Persea lancifolia** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 419, pl. xix, f. 3, 4, 1869.

Eolignitic: Mississippi.

**Persea Leconteana** Lx. Cret. Fl., p. 75, pl. xxviii, f. 1, 1874.

Sassafras Leconteanum Lx. Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 1, 1869.

Quercus Benzoin? Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

Dakota group: Fort Harker, Kansas.

——?: Nanaimo, Vancouver Island.

*Persea nebrascensis* Lx. = *Laurus nebrascensis*.

**Persea pseudo-carolinensis** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 19, pl. vii, f. 1, 2, 1878.

Miocene: Table Mountain and Corral Hollow, California.

**Persea punctulata** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 26, pl. xiv, f. 1, 1888.

Miocene?: Corral Hollow, California.

**Persea Schimperii** Lx. Fl. Dak. Gr., p. 103, pl. xvi, f. 5, 1892.

Dakota group: Kansas.

**Persea speciosa?** Heer. Fl. Tert. Helv., vol. ii, p. 81, pl. xc, f. 11, 12; c, f. 18, 1856; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 36, 1888.

——?: Selma, Texas.

**Persea Sternbergii** Lx. Cret. Fl., p. 76, pl. vii, f. 1, 1874.

Ficus Sternbergii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 423, 1872 [1873].

Dakota group: Fort Harker, Kansas.

**PERSEOXYLON** Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, vol. viii, p. 153 [11], 1887.

**Perseoxydon aromaticum** Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, p. 157, 1887; Zeitschr. d. Deutschen geol. Gesell. Jahr. 1896, p. 254, 1896,

Laurinoxydon aromaticum Felix. Jahrb. d. Kgl. Ungar. Geol. Anstalt, vol. vii, p. 27, pl. i, f. 7; ii, f. 7, 9, 1884.

Eocene: Yanceys, Yellowstone National Park; Hungary.

**PERSOONIA** Swartz. In Trans. Linn. Soc., vol. iv, p. 215, 1798.

**Persoonia Lesquereuxii** Kn. in Lx. Fl. Dak. Gr., p. 89, pl. xx, f. 10-12, 1892; Newby., Fl. Amboy Clays, p. 71, pl. xlii, f. 16, 1895 [1896].

Dakota group: Kansas.

Amboy clay: No location.

**Persoonia oviformis** Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Bellingham Bay.

**Persoonia spatulata** Hollick. in Newby. Fl. Amboy Clays, p. 71, pl. xlii, f. 14, 1895 [1896].

Amboy clay: No location.

**PHASEOLITES** Unger. Synop. Pl. Foss., p. 244, 1845.

**Phaseolites formus** Lx. Fl. Dak. Gr., p. 147, pl. lv, f. 5, 6, 12, 1892.

Dakota group: Kansas.

**Phaseolites juglandinus?** Heer. Lesquereux, Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876].

——: Green River near mouth of White River.

**PHEGopteris** Presl. Pterid., p. 179, 1836.

**Phegopteris Grothiana** Heer. Fl. Foss. Arct., vol. vii, p. 3, pl. xlviii, f. 12, 13, 1883; Fl. Amboy Clays, p. 42, pl. iii, f. 4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**PHRAGMITES** Trinius. Fund. Agrost., p. 134, 1820.

**Phragmites alaskana** Heer. Fl. Foss. Alask., p. 24, pl. i, f. 12, 1869; Lx., Ann. Rept., op. cit., p. 296, 1871 [1872]; Tert. Fl., p. 90, pl. viii, f. 10-12, 1878.

Eocene?: Port Graham, Alaska.

Fort Union group: Montana.

Livingston beds?: Bozeman coal field, Montana.

Green River group: Green River, Colorado.

**Phragmites cordaiformis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv., p. 26, pl. v, f. 22, 1882 [1883].

Upper Cretaceous: North Saanich and Nanaimo; Baynes Sound, Vancouver.

**Phragmites cretaceus** Lx. Cret. Fl., p. 55, pl. i, f. 13, 14; pl. xxix, f. 7, 1874; Fl. Dak. Gr., p. 37, pl. ii, f. 8, 1892.

*Arundo cretaceus* Lx. Am. Journ. Sci., vol. xlvi, p. 92, 1868.

*Equisetum nodosum* Lx. Cret. and Tert. Fl., p. 25, 1883.

Dakota group: Kansas.

**Phragmites ceningensis** Al. Br. In Stizenberger, Verstein., p. 75, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 284, 1871, [1872]; Tert. Fl., p. 88, pl. viii, f. 1, 2, 1878.

Miocene: John Day Valley, Oregon.

True Laramie to Upper Miocene or Pliocene.

**Phragmites** sp., Dn. Rept. on Geol. and Res., near 49th Parallel, Appendix A, p. 329, 1875.

——: Porcupine Creek.

**Phragmites** sp., Newby. Later Extinct Floras, p. 38, 1868.

Fort Union group: Fort Union, North Dakota.

**PHYLLITES** Sternberg. Vers., vol. i, fasc. iii, p. 39, 1823.

**Phyllites aceroides** Heer. Fl. Foss. Arct., vol. i, p. 139, pl. xxiii, f. 5, 1868.

Miocene?: Mackenzie River, British Columbia.

**Phyllites amorphus** Lx. Am. Journ. Sci., vol. xlv, p. 102, 1868; Cret. Fl., p. 113, pl. xxii, f. 3, 4, 1874.

Dakota group: Decatur, Nebraska.

**Phyllites arctica** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 230, pl. ix, f. 10, 11, 1894.

Eocene?: Herendeen Bay, Alaska.

**Phyllites aristolochiæformis** Lx. Fl. Dak. Gr., p. 217, pl. lix, f. 8, 1892.

Dakota group: Kansas.

**Phyllites amissus** Lx. Fl. Dak. Gr., p. 217, pl. lxii, f. 1, 1892.

Dakota group: Kansas.

**Phyllites betulæfolius** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 430, pl. xxiii, f. 2-4, 1869; Cret. Fl., p. 112, pl. xxviii, f. 4-7, 1874.

Dakota group: Kansas and Nebraska.

**Phyllites carneosus** Newby. Later Extinct Floras, p. 75, 1868.

Fort Union group: Fort Union, North Dakota.

**Phyllites celatus** Lx. Fl. Dak. Gr., p. 215, pl. lxi, f. 1, 1892.

Dakota group: Kansas.

**Phyllites cotinus** Lx. = *Liriodendron primævum*.

**Phyllites cupanioides** Newby. = *Pterospermites cupanioides*.

**Phyllites cuspidatus** Rossm. Lx. = *Quercus* cf. *cuspidata*.

**Phyllites cyclophylla**[us] (Lx.) Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 11, 1894.

*Salvinia cyclophylla* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 408, 1873 [1874]; Tert. Fl., p. 64, pl. v, f. 10, 10a, 1878.

Green River group: Middle Park, Colorado.

**Phyllites durescens** Lx. Fl. Dak. Gr., p. 218, pl. lxi, f. 5; pl. lxii, f. 3, 1892.

Dakota group: Kansas.

**Phyllites ellipticus** Newby. Fl. Amboy Clays, p. 130, pl. xxiv, f. 9, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Phyllites erosus** Lx. Fl. Dak. Gr., p. 216, p. lxi, f. 4, 1892.

Dakota group: Kansas.

**Phyllites flexuosus** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 735, pl. cii, f. 8, 1898.

Payette formation: Near Marsh post-office, Boise County, Idaho.

**Phyllites fraxineus** Lx. Proc. U. S. Nat. Mus., vol. x, p. 46, 1887.  
Nomen nudum.

Pleistocene: Bridgeton, New Jersey.

**Phyllites ilicifolius** Lx. Fl. Dak. Gr., p. 213, pl. x, f. 9, 1892.

Dakota group: Kansas.

**Phyllites improbatus** Lx. Tert. Fl., p. 107, pl. xiv, f. 18, 1878.

*Rhizocanlon gracile* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]. [Non *R. gracile* Sap., 1861.]

Laramie group: Black Buttes, Wyoming.



**Phyllites innectens** Lx. Fl. Dak. Gr., p. 219, pl. lxxv, f. 6, 1892.

Dakota group: Kansas.

**Phyllites juglandiformis** Sternb. [1825]=*Hicoria juglandiformis*.

**Phyllites Lacoei** Lx. Fl. Dak. Gr., p. 213, pl. xlv, f. 6, 1892.

Dakota group: Kansas.

**Phyllites laurencianus** Lx. Fl. Dak. Gr., p. 215, pl. xlv, f. 5, 1892.

Dakota group: Kansas.

**Phyllites mahoniæformis** Heer. Neue Denkschr., vol. xxi, p. 10, pl. ii, f. 9, 1865.

——: Burrard Inlet, British Columbia.

**Phyllites mimusopsoides** Lx. Proc. U. S. Nat. Mus., vol. x, p. 46, 1887. *Nomen nudum*.

Pleistocene: Bridgeton, New Jersey.

**Phyllites obcordatus** Heer=*Liriodendron primævum*.

**Phyllites obscura**[us] Hollick in Newby. Fl. Amboy Clays, p. 131, pl. xlii, f. 33, 1895 [1896].

Amboy clay: New Jersey.

**Phyllites obtusi-lobatus** Heer. Proc. Acad. Nat. Sci., Phila., vol. x, p. 266, 1858.

Dakota group: Kansas?

**Phyllites orbicularis** Newby. Fl. Amboy Clays, p. 130, pl. xxiv, f. 7, 8, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Phyllites payettensis** nom. nov.

*Phyllites obscurus* \* Kn., Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 735, pl. xcix, f. 10, 11, 1898.

[\**Phyllites obscurus* Kn., antedated by *P. obscura*. Hollick, 1895.]

Payette formation: Near Marsh post-office, Boise County, Idaho.

**Phyllites pachyphyllus** Font. Potomac Fl., p. 325, pl., cxlix, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Phyllites perplexus** Lx. Fl. Dak. Gr., p. 215, pl. xxxviii, f. 15, 1892.

Dakota group: Kansas.

**Phyllites poinsettoides** Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 37, pl. i, f. 10, 1892.

Cretaceous: Staten Island.

**Phyllites rhoifolius** Lx. Am. Journ. Sci., vol. xlvi, p. 101, 1868; Cret. Fl., p. 111, pl. xxii, f. 5, 6, 1874.

Dakota group: Lancaster County, Nebraska.

**Phyllites rhomboideus** Lx. Cret. Fl., p. 112, pl. vi, f. 7, 1874.

*Ficus? rhomboideus* Lx. Am. Journ. Sci., vol. xlvi, p. 96, 1868.

Dakota group: Decatur, Nebraska.

**Phyllites sapindiformis** Lx. Tert. Fl., p. 301, pl. xxix, f. 6, 7, 1878.

Green River group: Green River? Wyoming.

**Phyllites Snowii** Lx. Fl. Dak. Gr., p. 214, pl. xxxviii, f. 2, 1892.

Dakota group: Kansas.

**Phyllites stipulæformis** Lx. Fl. Dak. Gr., p. 216, pl. lxi, f. 2, 1892.

Dakota group: Kansas.

**Phyllites sulcatus** Lx. Am. Journ. Sci., vol. xlv, p. 206, 1868. [Not afterwards employed by Lesquereux.]

Laramie group?: Marshalls, Colorado.

**Phyllites truncatus** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 423, pl. xvii, f. 9, 1869.

Eolignitic: Mississippi.

**Phyllites umbonatus** Lx. Am. Journ. Sci., vol. xlvi, p. 102, 1868.

Dakota group: Beatrice, Nebraska.

**Phyllites undulatus** Newby. Fl. Amboy Clays, p. 131, pl. xxiv, f. 10, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Phyllites vanonæ** Heer. Phyll. Crét. d. Nebr., p. 22, pl. i, f. 8, 1866; Lx., Cret. Fl., p. 113, pl. xx, f. 7; pl. xxviii, f. 8, 1874; Fl. Dak. Gr., p. 214, pl. xx, f. 9; pl. xlii, f. 5, 1892.

Dakota group: Decatur, Nebraska; Kansas.

**Phyllites venosus** Newby. Later Extinct Floras, p. 75, 1868.

Fort Union group: Fort Union, North Dakota.

Canadian upper Laramie: Porcupine Creek, Canada.

**Phyllites wascoensis** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 22, pl. xv, f. 3, 1888.

Eocene?: Cherry Creek, Oregon.

**Phyllites zamiaeformis** Lx. Fl. Dak. Gr., p. 28, pl. ii, f. 7, 1891.

Dakota group: Kansas.

**Phyllites** sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 32, pl. ii, f. 20, 1886 [1887].

Canadian upper Laramie: Great Valley.

**Phyllites** sp.? Lx. Fl. Dak. Gr., p. 218, pl. lix, f. 7, 1892.

Dakota group: Kansas.

**Phyllites** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 64, 1893 [1894].

Upper Cretaceous: Vancouver Island.

**PHYLLOCLADOPSIS** Fontaine. Potomac Fl., p. 204, 1889.

**Phyllocladopsis heterophylla** Font. Potomac Fl., p. 204, pl. lxxxiv, f. 5; clxvii, f. 4, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Phyllocladus subintegrifolius** Lx. = *Thinfeldia subintegrifolia*.

**PHYSAGENIA** Heer. Fl. Tert. Helv., vol. i, p. 109, 1855.

*Physagenia Parlatorii* Heer. = *Equisetum Parlatorii*.

**Physagenia** sp., Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 43, 1888.

Denver group: Golden, Colorado.

**PICEA** Link. Abhandl. Akad. Wiss. Berlin 1827, p. 179, 1827-1830.

*Picea alba* Link. = *Picea canadensis*.

**Picea canadensis** (Mill.) B. S. P.

*Picea alba* Link. Handb., vol. ii, p. 478, 1831; Penhallow, Bull. Geol. Soc. Am., vol. i, p. 333, 1890.

Pleistocene: Bloomington, Illinois.

**Picea Mariana** (Mill.) B. S. P.

*Picea nigra* Link. Handb., vol. ii, p. 478, 1831; Penhallow in Dawson, Can. Rec. Sci., vol. v, p. 353, 354, 1895.

Pleistocene: Don Valley, Toronto; Hamilton, Ontario; Leda clay, Montreal; Missinabi River.

*Picea nigra* Link = *Picea Mariana*.

**Picea sitchensis** Carr. Knowlton, Journ. Geol., vol. iii, p. 529, f. (in text) 1, 1895; Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895.

Interglacial: Muir Glacier, Alaska.

Pleistocene: Don River, Canada.

**PIMELEA** Banks and Solander. Ex Gart. Fruct., vol. i, p. 186, 1788.

**Pimelea delicatula** Lx. Cret. and Tert. Fl., p. 168, pl. xxxiii, f. 15, 16, 1883.

Green River group: Florissant, Colorado.

**PINITES** Witham. Int. Struct. Foss. Veg., p. 72, 1833.

*Pinites palæostrobis* Ett. = *Pinus palæostrobis*.

**Pinites pannonicus** (Ung.) Göpp. Abhandl. d. Schles. Gesell. 1861, heft ii, p. 203, 1861.

*Peuce pannonica* Ung. Syn. Pl. Foss., p. 208, 1845.

Eocene?: Unga Island, Alaska.

**PINUS** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Pinus anthraciticus** Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 89, f. (in text) 10, 1892 [1893].

Kootanie: Anthracite, British Columbia.

**Pinus Armstrongi** Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 19, 1868.

Miocene?: Banks Land.

**Pinus Bathursti** Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 14, 1868.

Miocene?: Bathurst Island.

**Pinus Florissanti** Lx. Cret. and Tert. Fl., p. 138, pl. xxi, f. 13, 1883.

Green River group: Florissant, Colorado.

**Pinus MacClurii** Heer. Fl. Foss. Arct., vol. i, p. 134, pl. xx, f. 16-18; xxxv, f. 1; xxxvi, f. 1-5, 1868; Cramer in Heer's Fl. Foss. Arct., vol. i, p. 170, pl. xxxv, f. 1; xxxvi, f. 1-5, 1868.

Miocene?: Banks Land.

**Pinus (Cyclopitus) Nordenskiöldi** Heer. Fl. Foss. Arct., vol. iv, abt. i, p. 45, pl. ix, f. 1-6, 1876; Dn., Trans. Roy. Soc. Canada, vol. x, p. 88, f. (in text) 9, 1892 [1893].

Kootanie: Anthracite, British Columbia.

**Pinus palæostrobis** ? (Ett.) Heer. Fl. Tert. Helv., vol. i, p. 56, pl. xxi, f. 6, 1855; Lx., Tert. Fl., p. 83, pl. vii, f. 25, 31, 1878.

*Pinites palæostrobis* Ett. Tert. Fl. v. Häring in Tirol, p. 35, pl. vi, f. 22-23, 1853.

*Pinus polaris* Heer. Fl. Foss. Arct., vol. i, p. 157, pl. xxxi, f. 4b, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 410, 1873 [1874].

Green River group: Florissant, Colorado.

*Pinus polaris* Heer Lx. [1873] = *Pinus palæostrobis*

**Pinus Quenstedtii** Heer. Neue Denkschr. Schw. Ges., vol. xxiii, p. 13, pl. ii, f. 5, 9; pl. iii, 1869; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 392, 1875 [1876]; Cret. and Tert. Fl., p. 33, pl. i, f. 3, 4, 1883.

Dakota group: Kansas.

**Pinus strobus** L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 67, 72, 1896.

Pleistocene: New Brunswick.

**Pinus susquaensis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iii, f. 36, 1882 [1883].

Cretaceous: Susqua River, Northwest Territory.

Kootanie: Martin Creek, Coal Creek, and Crows Nest Pass, British Columbia.

**Pinus trunculus** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 78, f. (in text) 5, 1890.

—: Tranquille River, British Columbia.

**Pinus** sp., Font. Proc. U. S. Nat. Mus., vol. xvi, p. 269, pl. xxxvi, f. 11, 1893.

Trinity division: Glenrose, Texas.

**Pinus** sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. i, f. 13, 19, 20, 22, 1892.

Cretaceous: Staten Island.

**Pinus** sp., Heer. Fl. Foss. Alask., p. 23, pl. i, f. 11, 1869.

Eocene?: Port Graham, Alaska.

**Pinus** sp., Lx. Geol. and Nat. Hist. Survey Minn., vol. iii, p. 10, 1893.

Dakota group: New Ulm, Minnesota.

**Pinus?** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Fossil wood.]

Upper Laramie group: Mackenzie River?

**Pinus** sp.? Newby. Fl. Amboy Clays, p. 47, pl. ix, f. 5-8, 17, 18, 1895 [1896].

Amboy clay: No location.

**Pinus** sp. Heer. Fl. Foss. Arct., vol. i, p. 136, pl. xxi, f. 9, 1868.

Miocene?: Mackenzie River.

**Pinus** sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii; p. 722, pl. cxix, f. 3, 1898.

Payette formation: Idaho City, Idaho.

**PIPER** Linnaeus. Gen., ed. i, p. 333, 1737.

**Piper Heerii** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 44, 1888.

Denver group: Golden, Colorado.

**PISONIA** Plumier. Ex L., Gen., ed. i, p. 42, 1737.

**Pisonia racemosa** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1873 [1874]; Tert. Fl., p. 209, pl. xxxv, f. 4, 1878.

Laramie group: Black Buttes, Wyoming.

**PISTACIA** Linnæus. Hort. Cliff, p. 456, 1737.

**Pistacia oblanceolata** (Lx.) n. comb.

*Ficus oblanceolata* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 387, 1872 [1873]; Tert. Fl., p. 194, pl. xxviii, f. 9-12, 1878.

Laramie group: Erie, Colorado; Black Buttes, Wyoming.

**PISTIA** Linnæus. Gen., ed. i, p. 275, 1737.

**Pistia corrugata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1874 [1876]; Tert. Fl., p. 103, pl. lxi, f. 1, 3, 4, 6, 7, 9-11, 1878.

Montana formation: Point of Rocks, Wyoming.

Belly River series: Medicine Hat.

**PITYOXYTON** Kraus. In Schimper Pal. Vég., vol. ii, p. 377, 1870.

**Pityoxylon fallax** Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahrg. 1896, p. 254, 1896.

Eocene: Yanceys, Yellowstone National Park.

**Pityoxylon Hollicki** Kn. In Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 134, figs. [in text] 1, 2, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Pityoxylon inaequale** Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahrg. 1886, p. 483, pl. xii, f. 3, 1886.

Eocene?: Danaaku, Alaska.

**Pityoxylon Krausei** Felix. Zeitschr. d. Deutsch. geol. Gesell. Jahrg. 1886, p. 486, pl. xii, f. 1, 2, 1886.

Fort Union group: Little Missouri, Dakota.

**Pityoxylon Pealei** Kn. Bull. Torr. Bot. Club, vol. xxiii, p. 251, pl. cclxxi, 1896.

Miocene: Upper Galletin Basin, Montana.

**Pityoxylon** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: West of Medicine Hat.

**PLANERA** Gmelin. Syst., p. 150, 1791.

**Planera aquatica** (Walt.) Gmel. Syst. Nat., vol. ii, p. 150, 1791; Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

*Planera Gmelini* Mx. Fl. Bor. Am., vol. ii, p. 248, 1803; Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.

Pleistocene: Banks of Mississippi River, near Columbus, Kentucky.

Miocene?: Bridgeton, New Jersey.

**Planera crenata** Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Tertiary: Tongue River, Wyoming.

*Planera dubia* Lx. = *Planera Ungerii*.

*Planera Gmelini* Mx. Lx. = *Planera aquatica*.

**Planera Knowltoniana** Hollick in Newby. Fl. Amboy Clays, p. 69, pl. xlii, f. 1-4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Planera longifolia** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 371, 1872 [1873]; Tert. Fl., p. 189, pl. xxvii, f. 4-6, 1878.

Quercus semi-elliptica Göpp. Lx., Ann. Rept., p. 286, 1871 [1872].

Green River group: Elko Station, Nevada; Florissant, Colorado.

Eocene?: North Fork Similkameen River, British Columbia.

**Planera longifolia myricæfolia** Lx. Cret. and Tert. Fl., p. 161, pl. xxix, f. 15-27, 1883.

Green River group: Florissant, Colorado.

**Planera microphylla** Newby. Later Extinct Floras, p. 55, 1868.

Fort Union group: Fort Union, North Dakota.

**Planera nervosa** Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].

Eocene: Green River, Wyoming.

**Planera Unger** Ett. Foss. Fl. v. Wien., p. 14, pl. ii, f. 5-18, 1851; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. loc. cit., p. 313, 1874 [1876]; Tert. Fl., p. 190, pl. xxvii, f. 7, 1878.

Planera dubia Lx. Am. Journ. Sci., vol. xxviii, p. 361, 1859.

Planera longifolia? Lx. Ann. Rept., op. cit., p. 371, 1872 [1873].

Miocene: John Day Valley, Oregon.

Green River group: Florissant, Colorado.

Eocene: Port Graham, Alaska; Bellingham Bay?

**Planera variabilis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882, [1883].

Eocene: Green River, Wyoming.

**PLATÆANTHUS** Newberry. Fl., Amboy Clays, p. 125, 1895 [1896].

**Platæanthus (Williamsonia) problematicus** Newby. Fl., Amboy Clays, p. 125, pl. xxxv, f. 1-9, 1896.

Amboy clay, New Jersey.

**PLATANINIUM** Unger. In Endlicher Gen. Pl., suppl. ii, p. 101, 18—. [Not seen.]

**Plataninium Haydeni** Felix. Zeitschr. d. Deutsch. geol. Gesell., Jahr 1896, p. 251, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

**PLATANOPHYLLUM** Fontaine. Potomac Fl., p. 316, 1889.

**Platanophyllum crassinerve** Font. Potomac Fl., p. 316, pl. clviii, f. 5, 1889.

Potomac formation: Deep Bottom, Virginia.

**PLATANUS** (Tournefort) Linnæus. Hort. Cliff, p. 447, 1737.

**Platanus aceroides** Göpp. Zeit. Deutsch. Geol., Gesell., vol. iv., p. 492, 1852; Lx., Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1869; Tert. Fl., p. 184, pl. xxv, f. 4-6, 1878.

Fort Union group: Bad Lands, Dakota.

Livingston beds: Bozeman coal field, Montana.

Denver group: Golden, Colorado.

Denver group?: Carbon, Wyoming.

Laramie group: Black Buttes, Wyoming.

Miocene: John Day Valley, Oregon; Mackenzie River.

*Platanus aceroides* latior Lx. = *Platanus* latior.

*Platanus affinis* Lx. = *Cissites affinis*.

*Platanus affinis* ampla Dn. = *Cissites affinis* ampla.

***Platanus appendiculata*** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 12, pl. iii, f. 1-6; pl. vi, f. 7b, 1878.

Miocene: Chalk Bluffs, California.

***Platanus aquehongensis*** Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. iv, 1892.

Cretaceous: Staten Island.

***Platanus aspera*** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

***Platanus basilobata*** Ward. Bull. U. S. Geol. Surv., p. 35, pl. xvii, f. 1; xviii, f. 1-3, 3a; xix, f. 1, 1887.

Fort Union group: Seven-Mile and Clear Creeks, Montana.

***Platanus cissoides*** Lx. Fl. Dak. Gr., p. 75, pl. lxi, f. 3, 1892

Dakota group: Kansas.

***Platanus cordata*** nom. nov.

*Quereus platania* Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 386, 1872 [1873]; Tert. Fl., p. 160, pl. xxi, f. 1, 1878.

Eocene?: Cherry Creek, Oregon.

Laramie group?: Carbon, Wyoming.

***Platanus diminutiva*** Lx. Cret. Fl., p. 73, pl. viii, f. 5, 1874.

*Platanus diminutivus* Lx. Am. Journ. Sci., vol. xlvi, p. 98, 1868.

Dakota group: Nebraska?

***Platanus dissecta*** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 13, pl. vii, f. 12; pl. x, f. 4, 5, 1878. Cret. and Tert. Fl., p. 249, pl. lvi, f. 4; pl. lvii, f. 1-2, 1883.

Miocene: Chalk Bluffs, Table Mountain, Corral Hollow, and Spanish Peak, California.

***Platanus Guillelmæ*** Göpp. Zeitschr. Deutsch. Geol. Gesell., vol. iv, p. 492, 1852. Tert. Fl. v. Schossnitz, p. 21, pl. xi, f. 1, 2, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872]; Tert. Fl., p. 183, pl. xxv, f. 1-3, 1878.

Fort Union group: Yellowstone River, Montana; Bad Lands, Dakota.

Denver group: Golden, Colorado.

Denver group?: Carbon, Wyoming.

Eolignitic: McLees, Louisiana.

***Platanus Haydenii*** Newby. Later Extinct Floras, p. 70, 1868; Ill. Cret. and Tert. Pl., pls. xix, xx, xxi, f. 1, 1883 [1884].

Fort Union group: Yellowstone River, Montana; Bow River.

Denver group: Sedalia and Golden, Colorado.

Laramie group?: Sand Creek, Colorado.

***Platanus Heerii*** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 303, 1871 [1872]; Cret. Pl., p. 70, pl. viii, f. 4; ix, f. 1, 2, 1874; Rept. on Clays in N. J., p. 29, 1878.

Dakota group: Salina River, Kansas.

Amboy clay: Washington, New Jersey.

Mill Creek series: Mill Brook.

**Platanus heterophyllus** Newby. Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignite Tertiary: Wood End, Canada.

**Platanus integrifolia** Lx. = **Platanus Reynoldsii integrifolia**.

**Platanus latiloba** Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Platanus latior** (Lx.) n. comb.

**Platanus primæva** Lx. Cret. Fl., p. 69, pl. vii, f. 2; pl. xxvi, f. 2, 1874; Fl.

Dak. Gr., p. 72, pl. viii, f. 7, 8b; x, f. 1, 1892.

**Platanus aceroides**? Göpp., var. **latior** Lx. Am. Journ. Sci., vol. xlii, p. 97, 1868.

Dakota group: Nebraska, Kansas, and Minnesota.

**Platanus latior grandidentata** (Lx.) n. comb.

**Platanus primæva grandidentata** Lx. Fl. Dak. Gr., p. 73, pl. ix, f. 1, 2, 1892.

Dakota group: Kansas.

**Platanus latior integrifolia** (Lx.) n. comb.

**Platanus primæva integrifolia** Lx. Fl. Dak. Gr., p. 74, pl. xlix, f. 4, 1892.

Dakota group: Kansas.

**Platanus latior subintegrifolia** (Lx.) n. comb.

**Platanus primæva subintegrifolia** Lx. Fl. Dak. Gr., p. 73, pl. ix, f. 3, 4, 1892.

Dakota group: Kansas.

**Platanus marginata** (Lx.) Heer. Fl. Foss. Aret., vol. vii, p. 97, pl. xcvi, f. 3-5; pl. xcix, f. 2, 3; pl. ci, f. 5, 1883.

**Viburnum marginatum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1872 [1873]; Tert. Fl., 223, pl. xxxvii, f. 11; pl. xxxviii, f. 1, 4. [Non 2, 3, 5] 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes and Point of Rocks, Wyoming.

**Platanus Newberryi** Lx. = **Platanus Newberryana**.

**Platanus?** **Newberryana** Heer. Phyl. Crét. d. Nebr., p. 16, pl. i, f. 4, 1866.

**Platanus Newberryi** Lx. Am. Journ. Sci., vol. xlii, p. 97, 1868.

Dakota group: Beatrice, Nebraska, etc.

**Platanus nobilis** Newby. Later Extinct Floras, p. 67, 1868; Dn., Trans. Roy. Soc. Canada, vol. iv., sec. iv, p. 24, pl. i, f. 7, 1886 [1887].

Fort Union group: Seven-Mile Creek, Montana.

Upper Laramie group: Calgary, Canada; Souris River, British Columbia.

Miocene: John Day Valley, Oregon.

**Platanus occidentalis** L. Knowlton, Am. Geol., vol. xviii, p. 371, 1896; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 68, 72, 1896.

Glacial: Morgantown, West Virginia.

Pleistocene: Don Valley, Toronto.

**Platanus obtusiloba** Lx. Am. Journ. Sci., vol. xlii, p. 97, 1868.

Dakota group: Beatrice, Nebraska.



**Platanus platanoides** (Lx.) n. comb.

*Viburnum platanoides* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.. p. 314, 1874 [1876]; Tert. Fl., p. 224, pl. xxxviii, f. 8, 9, 1878.

Laramie group: Black Buttes, Wyoming.

*Platanus primæva* Lx. = *Platanus latior*.

*Platanus primæva grandidentata* Lx. = *Platanus latior grandidentata*.

*Platanus primæva integrifolia* Lx. = *Platanus latior integrifolia*.

*Platanus primæva subintegrifolia* Lx. = *Platanus latior subintegrifolia*.

**Platanus Reynoldsii** Newby. Later Extinct Floras, p. 69, 1868; Lx., Tert. Fl., p. 185, pl. xxvi, f. 4, 5; pl. xxvii, f. 1-3, 1878.

Fort Union group: Montana.

Upper Laramie group: Canada.

Denver group: Golden, Colorado.

Miocene?: ?John Day Valley, Oregon.

**Platanus Reynoldsii integrifolia** Lx. Tert. Fl., p. 185, 1878.

*Platanus integrifolia* Lx. MSS. in Lx., Tert. Fl., p. 185, 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

*Platanus recurvata* Lx. = *Sassafras recurvatum*.

**Platanus rhomboidea** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400, 1873 [1874]; Tert. Fl. 186, pl. xxvi, f. 6, 7, 1878.

*Viburnum anceps* Lx. Tert. Fl., p. 227, pl. xxxviii, f. 11, 1878.

Denver group: Golden, Colorado.

**Platanus?** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Belly River series: Ribstone Creek.

**Platanus** sp., Cragin. Bull. Washburn College Laboratory, vol. ii, no. 10, p. 66, 1889.

Cretaceous: Cimarron Valley, south of Mead County, Kansas.

**Platanus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie?: Dutton Creek coal, Wyoming.

**PLATYPTERYGIUM** Schimper. In Zittel Handb. Pal., vol. ii, p. 225, 1880.

**Platypterygium densinerve** Font. Potomac Fl., p. 169, pl. xxx, f. 8; xxxi, f. 1, 4; xxxii, f. 1, 2; xxxiii, f. 1; xxxiv, f. 1; xxxv, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Platypterygium Rogersianum** Font. Potomac Fl., p. 171, pl. xxxi, f. 2; xxxiii, f. 2; xxxiv, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**POACITES** Brongniart. Prod. Hist. Vég. Foss., p. 137, 1828.

**Poacites lævis** Al. Br. In Stizenberger, Uebersicht d. Vers. d. Baden, p. 74, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872].

Green River group: Barrel Springs, Wyoming.

**Poacites Mengeanus** Heer. Mioc. balt. Fl., p. 59, pl. xv, f. 2-11, 1859; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 35, 1887.

Pliocene?: Clear Lake, California

**Poacites tenue-striatus** Heer. Fl. Foss., Alask., p. 24, pl. i, f. 14, 1869.

Eocene?: Port Graham, Alaska.

**PODOCARPITES** Andreæ. Abh. der k. k. geol. Reichsanst., vol. ii, abt. iii p. 45, 1853.

**Podocarpites Tyrrellii** Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887.

Belly River series: Vermilion River.

**PODOCARPUS** (L'Heritier) Persoon. Syn., vol. ii, p. 580, 1807

**Podocarpus eocenica?** Ung. Foss. Fl. v. Sotzka, p. 28 [158], pl. ii, [xxii], f. 11-16, 1850; Lx., Cret. and Tert. Fl., p. 140, 1883.

Green River group: Florissant, Colorado.

**PODOGONIUM** Heer. Fl. Tert. Helv., vol. iii, p. 113, 1859.

**Podogonium acuminatum** Lx. Cret. and Tert. Fl., p. 201, 1883.

Green River group: Florissant, Colorado.

**Podogonium americanum** Lx. Tert. Fl., p. 288, pl. lix, f. 5; pl. lxiii, f. 5; pl. lxxv, f. 6, 1878.

Podogonium sp.? Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874].

Laramie group: Black Buttes, Wyoming.

Montana formation: Point of Rocks, Wyoming.

Podogonium sp., Lx. = Podogonium Americanum.

**PODOZAMITES** Fr. Braun in Münster Beiträge z. Petrefacten-Kunde, vol. ii, heft vi, p. 28, 1843.

**Podozamites acuminatus** Hollick in Newberry. Fl. Amboy Clays, p. 45, pl. xiii, f. 7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Podozamites acutifolius** Font. Potomac Fl., p. 181, pl. lxxx, f. 6; lxxxv, f. 10, 15; lxxxvii, f. 1, clxx, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, Deep Bottom, near Telegraph Station, and near Brooke, Virginia.

Trinity division: Glenrose, Texas.

**Podozamites angustifolius** (Eichw.) Schimp. Pal. Vég., vol. ii, p. 160, 1870; Lx., Cret. and Tert. Fl., p. 28, 1884; Newby., Fl. Amboy Clays, p. 44, pl. xiii, f. 1-4, 1895 [1896].

Dakota group: Kansas.

Amboy clay: Woodbridge, New Jersey.

Podozamites caudatus Lx. = Dammarites caudatus.

**Podozamites distantinervis** Font. Potomac Fl., p. 179, pl. lxxix, f. 9; lxxxii, f. 4; lxxxiii, f. 1, 2, 6, 7; lxxxiv, f. 1, 2, 8, 10, 14, 15; lxxxv, f. 12, 16, 1889.

Potomac formation: Near Potomac Run, Fredericksburg, and near Telegraph Station, Virginia.

*Podozamites emarginatus* Lx. = *Dammarites emarginatus*.

***Podozamites grandifolius*** Font. Potomac Fl., p. 180, pl. lxxxiii, f. 2; lxxxiii, f. 5, 1889.

Potomac formation: Fredericksburg, and near Potomac Run, Virginia.

***Podozamites Haydenii*** Lx. Cret. and Tert. Fl., p. 27, 1883.

*Pterophyllum Haydenii* Lx. Am. Journ. Sci., vol. xvi, p. 91, 1868; Cret. Fl., p. 49, pl. i, f. 6, 1878.

Dakota group: Decatur, Nebraska.

***Podozamites lanceolatus*** (L. and H.) Schimp. Pal. Vég., vol. ii, p. 160, 1870; Lx., Fl. Dak. Gr., p. 28, pl. i, f. 5, 6, 1891; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 6, pl. i, f. 3, 1885 [1886].

*Zamia lanceolata* L. and H. Foss. Fl., vol. iii, pl. 193, 1836.

Kootanie: Martin Creek; Kootanie Pass., etc, British Columbia.

Dakota group: Kansas.

***Podozamites latipennis*** Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 42, pl. xiv, f. 1-9; xv, f. 2a, 3b, 1884; Weed, Bull. Geol. Soc. Am., vol. iii, p. 323, 1892. [Doubtful.]

Kootanie: Sun River, Montana.

***Podozamites marginatus?*** Heer. Fl. Foss. Arct., vol. vi., abt. ii, p. 43, pl. xvi, f. 10, 1882; Fl. Amboy Clays, p. 44, pl. xiii, f. 5, 6, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

***Podozamites nervosa*** Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 6, 1891.

Kootanie: Great Falls, Montana.

***Podozamites oblongus*** Lx. Cret. and Tert. Fl., p. 28, pl. i, f. 10, 11.

Dakota group: Kansas.

***Podozamites pedicellatus*** Font. Potomac Fl., p. 180, pl. lxxvi, f. 1; lxxviii, f. 7; lxxxii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

*Podozamites praelongus* Lx. = *Dammarites caudatus*.

***Podozamites stenopus*** Lx. Fl. Dak. Gr., p. 27, pl. i, f. 7, 1891.

Dakota group: Kansas.

***Podozamites subfalcatus*** Font. Potomac Fl., p. 179, pl. lxxviii, f. 6; clxx, f. 9, 1889.

Potomac formation: Near Brooke, Virginia.

***Podozamites tenuinervis*** Heer. Fl. Foss. Arct., vol. vi., abt. ii, p. 44, pl. xvi, f. 9, 1882; Newby., Bull. Torr. Bot. Club, vol. xiii. p. 35, 1886.

Amboy clay: New Jersey.

***Podozamites* sp.**, Font. Proc. U. S. Nat. Mus., vol. xvi, p. 267, pl. xxxvi, f. 8, 1893.

Trinity division: Glenrose, Texas.

Pollen sacs? Font. Potomac Fl., p. 272, pl. cxxxvi, f. 7, 1889.

Potomac formation: Virginia.

**POLYPODIUM** (Tournefort) Linnaeus. Gen. Pl., p. 322, 1737.

***Polypodium dentatum*** Font. Potomac Fl., p. 105, pl. xxii, f. 4, 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Polypodium fadyenioide** Font. Potomac Fl., p. 104, pl. xvi, f. 4, 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

**POPULITES** Lesquereux. Am. Journ. Sci., vol. xlv, p. 93, 1868.

*Populites affinis* Lx. = *Cissites affinis*.

**Populites cyclophylla** (Heer) Lx. Am. Journ. Sci., vol. xlv, p. 93, 1868; Cret. Fl., p. 59, 1874; Fl. Dak. Gr., p. 48, 1891.

*Populus cyclophylla* Heer. Proc. Acad. Nat. Sci., Phila., vol. x, p. 266, 1858.

*Cissites cyclophylla* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 353, 1874 [1876].

Dakota group: New Ulm, Minnesota; Lancaster and Decatur, Nebraska; Peace River, Northwest Territory.

**Populites elegans** Lx. Am. Journ. Sci., vol. xlv, p. 94, 1868; Geol. and Nat. Hist. Surv. Minn. iii, p. 10, pl. A, f. 2; pl. B, f. 1, 1893.

Dakota group: Decatur, Nebraska; New Ulm, Minnesota.

*Populites fagifolia* Lx. = *Grewiopsis flabellata*.

*Populites flabellata* Lx. = *Grewiopsis flabellata*.

**Populites lancastriensis** Lx. Cret. Fl., p. 58, pl. vii, f. 1, 1874.

*Populus lancastriensis* Lx. Am. Journ. Sci., vol. xlv, p. 93, 1868.

Dakota group: Lancaster, Nebraska; New Ulm, Minnesota.

**Populites litigiosus** (Heer) Lx. Fl. Dak. Gr., p. 46, pl. vii, f. 7 · pl. viii, f. 5; pl. xlv, f. 6; pl. xlvii, f. 1, 1891.

*Populus litigiosa* Heer. Phyll. Crét. d. Nebr., p. 13, pl. i, f. 2, 1866.

Dakota group: Kansas; New Ulm, Minnesota.

**Populites microphyllus** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 430, pl. xxiii, f. 2, 3, 1869.

Dakota group: Kansas.

*Populites ovata* Lx. = *Ampelophyllum ovatum*.

**Populites probalsamifera** Dn. Traus. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 23, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

*Populites quadrangularis* Lx. = *Hamamelites quadrangularis*.

*Populites salinae* Lx. = *Menispermities salinae*.

*Populites salisburiaefolius* Lx. = *Cissites salisburiaefolius*.

**Populites Sternbergii** Lx. Fl. Dak. Gr., p. 45, pl. vii, f. 8, 9, 1891.

Dakota group: Kansas.

**Populites Winchelli** Lx. Geol. and Bot. Hist. Surv. Minn., vol. iii, p. 12, pl. B, f. 2, 1893.

Dakota group: New Ulm, Minnesota.

**POPULOPHYLLUM** Fontaine. Potomac Fl., p. 311, 1889.

**Populophyllum crassinerve** Font. Potomac Fl., p. 312, pl. clviii, f. 4, 1889.

Potomac formation: Deep Bottom, Virginia.

**Populophyllum hederæforme** Font. Potomac Fl., p. 311, pl. clxvi, f. 3, 1889.

Potomac formation: Virginia.

**Populophyllum reniforme** Font. Potomac Fl., p. 311, pl. clv, f. 9; clvi, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

**POPULUS** Linnaeus. Syst., ed. i, 1735.

**Populus acerifolia** Newby. Later Extinct Floras. v. 65. 1868: Ill. Cret. and Tert. Pl., pl. xiii, f. 5-8, 1878.

Fort Union group: Yellowstone River, Montana.

Canadian upper Laramie: Canada; Souris River, etc.

**Populus aequalis** Schimp. = *Populus laevigata*.

**Populus amblyrhyncha** Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. vi, f. 1-8; vii, f. 1-3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Populus anomala** Ward. Bull. U. S. Geol. Surv., no. 37, p. 13, pl. viii, f. 7, 1887.

Fort Union group: Burns's Ranch, Montana.

**Populus? apiculata** Newb. In MSS. Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 31, pl. iii, f. 2, 1892; Newby., Fl. Amboy Clays, p. 65, pl. xv, f. 3, 4, 1895 [1896].

Cretaceous: Staten Island.

Amboy clay: Woodbridge, New Jersey.

**Populus arctica** Heer. Fl. Foss. Arct., vol. i, p. 100, pl. iv, f. 6a, 7; pl. v; pl. vi, f. 5, 6; pl. viii, f. 5, 6; pl. xvii, f. 5 f. e.; op. cit., p. 137, pl. xxi, f. 14, 15a, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 300, 1871 [1872]; Tert. Fl., p. 178, pl. xxiii, f. 1-6, 1878.

*Populus decipiens* Lx. Ann. Rept., op. cit., p. 385, 1872 [1873]; Tert. Fl., p. 179, pl. xxiii, f. 7-11, 1878.

From Laramie to Miocene: Abundant.

Miocene?: Mackenzie River; Great Valley; Souris River.

**Populus aristolochioides** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875.

Dakota group: Kansas.

**Populus attenuata** Al. Br. Lx. = *Populus subrotunda*.

**Populus auriculata** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 356, pl. iv, f. 4, 1895.

Potomac formation: Mount Vernon, Virginia.

**Populus balsamifera** L. Sp. Pl., ed. i, vol. ii, p. 1034, 1753; Dn., Can. Nat., vol. ii, p. 422, 1857; op. cit., new ser., vol. iii, p. 72, f. 2-4, 1868; Geol. Hist. Pl., p. 228, f. 78, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 72, 1896.

Pleistocene: Greens Creek and Bessier's Wharf, Ottawa River.

**Populus balsamoides** Göpp. Tert. Fl. v. Schosnitz, p. 23, pl. xv, f. 5, 6, 1855; Heer, Fl. Foss. Alask., p. 26, pl. ii, f. 3, 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1871 [1872].

Eocene?: Port Graham and near Litho, Alaska; Yellowstone Lake.

Miocene: Corral Hollow, California.

**Populus balsamoides eximia** (Göpp.) Lx. Cret. and Tert. Fl., p. 226, pl. xlvia, f. 10, 1883.

*Populus eximia* Göpp. Tert. Fl. v. Schossnitz, p. 23, 1855.

Fort Union group: Bad Lands, Dakota.

**Populus balsamoides?** Göpp., var. **latifolia** Lx. Cret. and Tert. Fl., p. 158, pl. xxxi, f. 4, 1883.

Green River group: Florissant, Colorado.

**Populus Berggreni** Heer. Öfversigt. K. Vetenskaps-Akad. Förhandl., 1871, p. 1183, 1871; Lx., Fl. Dak. Gr., p. 42, pl. viii, f. 2-4, 1891.

Dakota group: Kansas; New Ulm, Minnesota.

**Populus cordata** Newby. Later Extinct Floras, p. 60, 1868; Ill. Cret. and Tert. Pl., pl. xiv, f. 6, 1878.

Fort Union group: Yellowstone River, Montana.

**Populus cordifolia** Newby. Later Extinct Floras, p. 18, 1868; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Dakota group: Nebraska.

Upper Laramie group: Canada.

**Populus craspedodroma** Ward. Bull. U. S. Geol. Surv., no. 37, p. 21, pl. viii, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

**Populus cuneata** Newby. Later Extinct Floras, p. 64, 1868; Ill. Cret. and Tert. Pl., pl. xiv, f. 1-4, 1878.

Fort Union group: Yellowstone River, Montana; Bad Lands, Dakota.

**Populus cyclophylla** Heer=**Populites cyclophyllus**.

**Populus daphnogenoides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. vii, f. 4-6, 1887.

Fort Union group: Seven-Mile Creek, Montana.

Eocene?: Similkameen Valley, British Columbia.

**Populus?** Debeyana Heer=**Juglans Debeyana**.

**Populus decipiens** Lx.=**Populus arctica**.

**Populus denticulata** Heer. Fl. Foss. Arct., vol. vii, p. 20, pl. iv, f. 5, 1883; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 40, 1887.

——: Upper Kanab Valley, Utah.

**Populus elliptica** Newby. Later Extinct Floras, p. 16, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Populus eotremuloides** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 725, pl. c, f. 1, 2; ci, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

**Populus flabellum** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 524, 1863.

——: Bellingham Bay, Washington.

**Populus genatrix** Newby. Later Extinct Floras, p. 64, 1868; Dn., Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Fort Union group: Yellowstone River, Montana.

Canadian upper Laramie: North Saskatchewan; Souris River, Great Valley; Canada.

**Populus glandulifera** Heer. Fl. Tert. Helv., vol. ii, p. 17, pl. lviii, f. 5-11; pl. lxxviii, f. 7 1856; Cret. and Tert. Fl., p. 226, pl. xlvia, f. 3, 4, 1883.

Eocene?: Fort Graham, Alaska.

Fort Union group: Montana; Bad Lands, Dakota.

Miocene: John Day Valley, Oregon.

**Populus grandidentata** Mx. Flor. Bor. Am., vol. ii, p. 243, 1803; Penhallow, Bull. Geol. Soc. Am., vol. i, p. 326, 1890.

Pleistocene: Greens Creek, Ottawa River; Montreal, Canada.

**Populus Grewiopsis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 23, pl. ix, f. 1, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Populus harkeriana** Lx. Fl. Dak. Gr., p. 44, pl. xlv, f. 4, 1892.

Dakota group: Fort Harker, Kansas.

**Populus hederoides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 22, pl. viii, f. 5, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Populus Heerii** Sap. Ann. d. Sci. Nat., 4th ser., vol. xvii, p. 87, pl. vii, f. 3, 1863; Lx., Cret. and Tert. Fl., p. 157, pl. xxx, f. 1-8; pl. xxxi, f. 11, 1883.

Green River group: Florissant, Colorado.

**Populus Heliadum** Ung. Lx., 1873=**Populus Ungerii**.

**Populus Hookeri** Heer. Fl. Foss. Arct., vol. i, p. 137, pl. xxi, f. 16, 1863; Dn., Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 71, pl. x, f. 5, 1889.

Miocene?: Mackenzie River.

**Populus hyperborea** Heer. Fl. Foss. Arct., vol. iii, pt. ii, p. 106, 1873; Lx., Fl. Dak. Gr., p. 43, pl. iii, f. 9-11; pl. viii, f. 1; pl. xlvii, f. 5, 1892.

Dakota group: Kansas.

**Populus inæqualis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 24, pl. ix, f. 2, 1887.

Fort Union group: Burns's Ranch, Montana.

**Populus kansaseana** Lx. Fl. Dak. Gr., p. 42, pl. xvii, f. 1-7, 1892.

Dakota group: Kansas.

**Populus Knightii** Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: Dutton Creek coal, Wyoming.

**Populus lævigata** Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 205, 1868; Tert. Fl., p. 175, pl. xxii, f. 9, 1878.

**Populus æqualis** Schimp. Pal. Vég., vol. ii, p. 693, 1872.

Denver group?: Rock Creek, Laramie Plains, Wyoming.

**Populus Lancastrensis** Lx. = **Populites Lancastrensis**.

**Populus latidentata** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 16, 1885 [1886].

Belly River series: Medicine Hat.

**Populus latior** Al. Br. In Buckl. Geol., p. 512, 1835?; Heer., Fl. Foss. Alask., p. 25, pl. ii, f. 4, 1869.

Eocene?: Port Graham,

Bull. 152—12

**Populus latior cordifolia** Heer. Fl. Tert. Helv., vol. ii, p. 12, pl. iv, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872].

*Populus latior transversa* Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 287, 1871 [1872].

Laramie group?: Medicine Bow, Wyoming.

*Populus latior transversa* Heer. = *Populus latior cordifolia*.

**Populus latior truncata** Al. Br. In Stizenberger, Uebers., p. 79, 1851; Lx., Cret. and Tert. Fl., p. 226, pl. xlv, f. 14, 1883.

Fort Union group: Bad Lands, Dakota.

**Populus leucophylla** Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Heer, Fl. Foss. Alask., p. 26. pl. iii, f. 4, 5, 1869.

Eocene: Alaska?

**Populus Lindgreni** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 725, pl. c. f. 3, 1898.

Payette formation: Marsh, Idaho.

*Populus litigiosa* Heer = *Populites litigiosus*.

**Populus longior** Dn. Trans. Roy. Soc. Canada, vol. i. sec. iv, p. 27, 1882 [1883].

Upper Cretaceous: Nanaimo; Baynes Sound.

**Populus Leuce** (Rossm.) Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Heer, Proc. Acad. Nat. Sci. Phila., vol. x, p. 265, 1858.

Dakota group: Kansas?

**Populus leucophylla** Ung. Gen. et Sp. Pl. Foss., p. 417, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872].  
[Not afterward recognized by Lesquereux.]

Laramie group?: Spring Canyon, Montana.

**Populus Meedsii** Kn. Proc. U. S. Nat. Mus., vol. xvi, p. 34, pl. i, f. 1, 2, 1893.

Fort Union group: Glendive?, Montana.

*Populus melanaria* Heer. Lx. = *Populus melanarioides*.

**Populus melanarioides** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 379, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302, 1874 [1876]; Tert. Fl., p. 174, pl. lxii, f. 5, 1878.

*Populus melanaria* Heer Lx. Ann. Rept., op. cit., p. 302, 1874 [1876]; Tert. Fl. p. 173, pl. lxiv, f. 5, 1878.

Montana formation: Point of Rocks, Wyoming.

**Populus microphylla** Newby. Later Extinct Floras, p. 17, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Populus monodon** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 413, pl. xv, f. 1, 2, 1869.

Eolignitic: Mississippi.

*Populus monodon* Lx. [Tert. Fl., pl. xxiv, f. 1, 2] = *Populus mutabilis ovalis* and *Ficus uncata*.



**Populus mutabilis crenata** Heer. Fl. Tert. Helv., vol. ii, p. 21, pl. lx, f. 5, 8, 11, 12a, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 386, 1872 [1873]. [Not afterwards referred to by Lesquereux.]

——: Carbon, Wyoming.

**Populus mutabilis lancifolia** Heer. Fl. Tert. Helv., vol. ii, p. 23, pl. lxi, f. 7, 8, 10, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Spring Canyon, Montana.

**Populus mutabilis ovalis** Heer. Fl. Tert. Helv., vol. ii, p. 22, pl. i, f. 1, 2; ii, f. 2 a b; lxi, f. 1-3, 6, 9; lxiii, f. 4, 1856; Lx., Tert. Fl., p. 177, pl. xxiv, f. 3, 4, 1878.

*Populus ovalis*? Göpp. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872].

*Populus mutabilis repando-crenata* Heer. In Lx., Trans. Am. Phil. Soc., vol. xiii, p. 413, pl. xviii, f. 4-6, 1869.

*Ficus ovalis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876].

*Populus monodon* Lx. Ex. p. Tert. Fl., p. 180, pl. xxiv, f. 2, 1878.

Livingston beds: Spring Canyon, Montana.

Denver group: Golden and Plum Creek, Colorado.

Laramie group: Black Buttes, Wyoming.

Laramie group?: Evanston, Wyoming.

Montana formation: Point of Rocks, Wyoming.

*Populus mutabilis repando-crenata* Heer = *Populus mutabilis ovalis*.

**Populus nebrascensis** Newby. Later Extinct Floras, p. 62, 1868.

Fort Union group: Yellowstone River, Montana.

Denver group: Golden, Colorado.

**Populus nebrascensis acute-dentata** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

**Populus nebrascensis grandidentata** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

**Populus nebrascensis longifolia** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 48, 1888.

Denver group: Golden, Colorado.

**Populus nebrascensis rotundata** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 47, 1888.

Denver group: Golden, Colorado.

**Populus nervosa** Newby. Later Extinct Floras, p. 61, 1868.

Fort Union group: Yellowstone River, Montana; North Saskatchewan, Canada.

**Populus nervosa elongata** Newby. Later Extinct Floras, p. 62, 1868.

Fort Union group: Yellowstone River, Montana.

**Populus obtrita** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 82, f. (in text) 12, 1890.

Miocene?: Similkameen Valley, British Columbia.

**Populus occidentalis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 727, pl. xcix, f. 14, 1898.

Payette formation: Marsh, Idaho.

**Populus ovalis**? Göpp. Lx. [1871]=*Populus mutabilis ovalis*.

**Populus oxyphylla** Sap. Ann. Sci. Nat. Bot., 5th ser., vol. viii, p. 73, 1867; Lx., Cret. and Tert. Fl., p. 159, pl. xxxviii, f. 9-11, 1883.

Green River group: Florissant, Colorado.

**Populus oxyrhyncha** Ward. Bull. U. S. Geol. Surv., no. 37, p. 21, pl. viii, f. 1, 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Populus polymorpha** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Populus potomacensis** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 356, pl. iv, f. 1-3, 1895.

Potomac formation: Mount Vernon, Virginia.

**Populus? problematica** Kn. Bull. U. S. Geol. Surv., no. 105, p. 51, pl. vi, f. 5, 6, 1893.

Laramie group: Head of Fir Canyon, near Bozeman, Montana.

**Populus protozadachii** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vii, f. 25, 1882 [1883].

Upper Cretaceous: Newcastle Island.

**Populus rectinervata** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 26, 1882 [1883].

Upper Cretaceous: Baynes Sound.

**Populus rhomboidea** Lx. Am. Journ. Sci., vol. xxvii, 2d ser., p. 360, 1859.

Upper Cretaceous: Newcastle Island; Nanaimo, Vancouver Island.

Miocene?: Mackenzie River.

Lignitic Tertiary: Porcupine Creek.

**Populus Richardsonsii** Heer. Fl. Foss. Arct., vol. i, p. 98, pl. iv, f. 1-5, vi, f. 7, 8; xv, f. 1c; 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 411, 1873 [1874]; Tert. Fl., p. 177, pl. xxii, f. 10-12, 1878.

Green River group: Elko Station, Nevada.

Canadian upper Laramie: Calgary, Canada.

Fort Union group: Montana.

Eocene?: Chignik Bay, Alaska.

Miocene: Mackenzie River.

**Populus rotundifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Fort Union group: Yellowstone River.

**Populus Russelli** Kn. Bull. U. S. Geol. Surv., no. 108, p. 104, 1893.

Miocene?: Ellensburg, Washington.

- Populus smilacifolia** Newby. Later Extinct Floras, p. 66, 1868.  
Fort Union group: Fort Union, North Dakota.
- Populus speciosa** Ward. Bull. U. S. Geol. Surv., no. 37, p. 20, pl. v, f. 4-7, 1887.  
Fort Union group: Clear Creek, Montana.
- Populus stygia** Heer. Fl. Foss. Arct., vol. iii, apt. ii, p. 107, 1873; Lx.  
Fl. Dak. Gr., p. 44, pl. iii, f. 12, 1892.  
Dakota group: Kansas.
- Populus subrotunda** Lx. Am. Journ. Sci., vol. xlv, p. 205, 1868.  
Populus attenuata Al. Br. Lx., Am. Journ. Sci., vol. xlv, p. 205, 1868.  
Populus subrotundata Lx. Tert. Fl., p. 173, pl. xxiv, f. 6-8, 1878.  
——: Carbon and Evanston, Wyoming; Rock Creek and Laramie  
Plains, Wyoming; Golden, Colorado?
- Populus subrotundata Lx. = Populus subrotunda.
- Populus tenuinervata** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 48, 1888.  
Denver group: Golden, Colorado.
- Populus trinervis** Dn. Trans. Roy. Soc., Canada, vol. i, sec. iv, p. 26,  
1882 [1883].  
Upper Cretaceous: Nanaimo; Baynes Sound.
- Populus Unger** Lx. Tert. Fl., p. 175, pl. xxiv, f. 5, 1878.  
Populus Heliadum Ung. Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,  
p. 397, 1873 [1874].  
Denver group: Golden, Colorado.
- Populus Whitei** Ward. Bull. U. S. Geol. Surv., no. 37, p. 22, pl. viii,  
f. 4, 1887.  
Fort Union group: Burns's Ranch, Montana.
- Populus Zaddachi** Heer. Fl. Tert. Helv., vol. iii, p. 307, 1859; Lx.,  
Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872];  
Cret. and Tert. Fl., p. 158, pl. xxxi, f. 8, 1883.  
Eocene?: Port Graham, Alaska.  
Miocene: Chalk Bluffs, California.  
Green River group: Florissant, Colorado.  
Fort Union group: Montana and Dakota.
- Populus** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73.  
Appen. I, p. 68, 1873.  
Cretaceous: Vancouver Island, British Columbia.
- Populus** sp. [Wood], Dn. Rept. on Geol. and Res. near 49th Parallel,  
Appen. A, p. 331, 1875.  
Lignitic tertiary: Forty-ninth parallel.
- Populus** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.  
[Wood.]  
Fort Pierre series: Head of Swift Current.
- Populus** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, 1882  
[1883].  
Upper Cretaceous; Baynes Sound.
- Populus** sp., Kn. Bull. U. S. Geol. Surv., no. 105, p. 50, pl. vi, f. 7-9,  
1893.  
Laramie group: Head of Bear Canyon, near Bozeman, Montana.

**PORANA** Burm. f. Fl. Ired., p. 51, 1768.

**Porana Bendirei** (Ward) Lx. Proc. U. S. Nat. Mus., vol. xi, p. 16 pl. viii, f. 4, 1888.

Marsilea Bendirei Ward. Fifth Ann. Rept. U. S. Geol. Surv., p. 446, 1883-84 [1885].

Miocene: John Day Valley, Oregon.

**Porana Speirii** Lx. Cret. and Tert. Fl., p. 172, pl. xxviii, f. 15, 1883.  
Green River group: Florissant, Colorado.

**Porana tenuis** Lx. Cret. and Tert. Fl., p. 173, 1883.  
Green River group: Florissant, Colorado.

**Porana** sp., Lx. Proc. U. S. Nat. Mus., vol. xi, p. 13, 1888.  
Eolignitic: Wickliffe, Kentucky.

**POTAMOGETON** (Tournefort) Linnæus. Syst. ed., i, 1735.

**Potamogeton geniculatus** Al. Br. Neues Jahrb. 1845, p. 168, 1845;  
Lx., Cret. and Tert. Fl., p. 142, 1883.

Green River group: Florissant, Colorado.

**Potamogeton pectinatus** L. Sp. Pl., p. 127, 1753; Penhallow, Trans. Roy. Soc., Canada, 2d ser., vol. ii, sec. iv, p. 66, 72, 1896.

Pleistocene: Besserer's Wharf, Ottawa River.

**Potamogeton perfoliatus** L. Sp. Pl., p. 126, 1753; Dn., Can. Nat., vol. iii, new ser., p. 72, 1868; Geol. Hist. Pl., p. 229, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River  
Canada.

**Potamogeton pusillus** L. Sp. Pl., p. 127, 1753; Dn., Can. Nat., vol. iii, new ser., p. 73, 1868; Geol. Hist. Pl., p. 229, 1888; Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River,  
Canada.

**Potamogeton rutilans** Wolfg. Penhallow = **Potamogeton rutilus**.

**Potamogeton rutilus** Wolfg.

**Potamogeton rutilans?** Wolfg. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 327, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 65, 72, 1896.

Pleistocene: Besserer's Wharf and Greens Creek, Ottawa River.

**Potamogeton Robbinsii** Oakes. Hovey's Mag., vol. vii, p. 180, 1841;  
Kn., Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

**Potamogeton? verticillatus** Lx. Cret. and Tert. Fl., p. 142, pl. xxiii, f. 5, 6, 1883.

Green River group: Florissant, Colorado.

**POTENTILLA** Linnæus. Syst., ed. i, 1735.

**Potentilla anserina** L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 330, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 66, 73, 1896.

**Potentilla norvegica** L. Dn., Can. Nat., vol. ii, p. 422, 1857.

**Potentilla canadensis** L. Dn., loc. cit., new ser., vol. iii, p. 71, 1868.

**Potentilla simplex?** Michx. Dn., Geol. Hist. Pl., p. 228, 1888.

Pleistocene: Greens Creek and Besserer's Wharf, Ottawa River,  
Canada.

*Potentilla canadensis* L.=*Potentilla anserina*.

*Potentilla norvegica* L.=*Potentilla anserina*.

*Potentilla simplex*? Mx.=*Potentilla anserina*.

**PREISSITES** Knowlton. Bull. Torr. Bot. Club, vol. xxi, p. 458, 1894.

**Preissites Wardii** Kn. Bull. Torr. Bot. Club, vol. xxi, no. 10, p. 458, pl. cexix, 1894.

Fort Union group: Burns's Ranch, 30 miles below Glendive, Montana.

*Prinos integrifolia* Ell. Lx.=*Ilex integrifolia*.

**PROTEÆPHYLLUM** Fontaine. Potomac Fl., p. 281, 1889.

**Proteæphyllum dentatum** Font. Potomac Fl., p. 286, pl. clvi, f. 7; clxxii, f. 1, 4; clxxiii, f. 12, 14, 1889.

Potomac formation: Baltimore, Maryland.

**Proteæphyllum ellipticum** Font. Potomac Fl., p. 285, pl. cxlii, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Proteæphyllum oblongifolium** Font. Potomac Fl., p. 284, pl. cxxxix, f. 5; cxl, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Proteæphyllum orbiculare** Font. Potomac Fl., p. 283, pl. cxxxix, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

**Proteæphyllum ovatum** Font. Potomac Fl., p. 285, pl. cxli, f. 1. 1889.

Potomac formation: Fredericksburg, Virginia.

**Proteæphyllum reniforme** Font. Potomac Fl., p. 282, pl. cxxxix, f. 3; clvi, f. 4; clx, f. 1, 2, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Virginia.

**Proteæphyllum tenuinerve** Font. Potomac Fl., p. 286, pl. cl, f. 13; clvi, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, Virginia.

**Proteæphyllum** sp., Font. Potomac Fl., p. 284, pl. cxxxix, f. 2, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**PROTEOIDES** Heer. Phyll. Crét. d. Nebr., p. 17, 1866.

**Proteoides acuta** Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 7, 8, 1866; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 431, pl. xxiii, f. 5-7, 1869.

Dakota group: Kansas and Nebraska.

**Proteoides daphnogenoides** Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 9, 10, 1866; Newby., Fl. Amboy Clays, p. 72, pl. xvii, f. 8, 9; xxxii, f. 11, 13, 14; xxxiii, f. 3; xli, f. 15, 1895 [1896].

Dakota group: Decatur, Nebraska.

Amboy clay: New Jersey; Staten Island; Sea Cliff, Long Island.

Mill Creek series: Mill Creek.

**Proteoides grevilleæformis** Heer. Phyll. Crét. d. Nebr., p. 17, pl. iv, f. 11, 1866; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 432, pl. xxiii, f. 8, 1869.

Dakota group: Decatur, Nebraska; Kansas.

**Proteoides lancifolius** Heer. Neue Denkschr. Schweiz. Gesel., vol. xxiv, p. 12, pl. iii, f. 5, 6, 1871; Lx., Cret. and Tert. Fl., p. 50, 1883; Fl. Dak. Gr., p. 90, pl. xv, f. 5; 1, f. 8, 1892.

Dakota group: Fort Harker, Kansas.

**Proteoides longus** Heer = *Myrica longa*.

**Proteoides major** Dn., Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xii, f. 54, 1893 [1894].

Upper Cretaceous: Wellington mine, Vancouver Island.

**Proteoides Neillii** Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xii, f. 53, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island.

**Proteoides** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Sayreville, New Jersey.

**Proteoides** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 61, pl. xiii, f. 55, 1893 [1894].

Upper Cretaceous: Wellington mine, Vancouver Island.

**PROTOFICUS** Saporta. Fl. Foss. Travert. d. Sézanne: Mem. Soc. Geol. d. Fr., 2d ser., vol. vii, p. 67, 1868.

**Protoficus inequalis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 512, 1882 [1883].

Tertiary: Tongue River, Wyoming.

**Protoficus Zeilleri** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 50, 1888.

Denver group: Golden, Colorado.

**PROTOPHYLLUM** Lesquereux. Cret. Fl., p. 100, 1874.

**Protophyllum boreale** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 23, pl. iv, f. 13, 1882 [1883].

—: Peace River, Northwest Territory.

**Protophyllum crassum** Lx. Fl. Dak. Gr., p. 193, pl. lxxv, f. 4, 1892.

Dakota group: Kansas.

**Protophyllum credneroides** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 363, pl. iii, f. 1; pl. viii, f. 4, 1874 [1876]; Cret. and Tert. Fl., p. 90, pl. ii, f. 1-3, 1883; Fl. Dak. Gr., p. 194, pl. xxxvi, f. 11; pl. xliii, f. 4, 5, 1892.

Dakota group: Kansas; New Ulm, Minnesota.

**Protophyllum crenatum** Kn. in Lx. Fl. Dak. Gr., p. 190, pl. lxxv, f. 7, 1892.

Dakota group: Kansas.

**Protophyllum denticulatum** Lx. Fl. Dak. Gr., p. 193, pl. xxxvi, f. 9, 1892.

Dakota group: Kansas.

**Protophyllum dimorphum** Lx. Fl. Dak. Gr., p. 190, pl. xli, f. 1, 1892.

Dakota group: Kansas.

**Protophyllum Haydenii** Lx. Cret. Fl., p. 106, pl. xvii, f. 3, 1874;  
Fl. Dak. Gr., p. 192, pl. xliii, f. 1; pl. xlv, f. 1, 2, 1892.

*Pterospermites Haydenii* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,  
p. 302, 1871 [1872].

Dakota group: Kansas.

**Protophyllum intergerrimum** Lx. Fl. Dak. Gr., p. 192, pl. xliii, f. 3,  
1892; Geol. and Nat. Hist. Surv. Minn., p. 21, pl. B, f. 10, 11, 1893.

Dakota group: Mankato, Minnesota.

**Protophyllum Leconteanum** Lx. Cret. Fl., p. 103, pl. xvii, f. 4; pl.  
xxvi, f. 1, 1874; Fl. Dak. Gr., p. 187, pl. xl, f. 1, 1892.

*Credneria Leconteana* Lx. Am. Journ. Sci., vol. xvi, p. 98, 1868.

Dakota group: Brookville, Kansas; Peace River, Northwest Ter-  
ritory.

**Protophyllum minus** Lx. Cret. Fl., p. 104, pl. xix, f. 2; pl. xxvii,  
f. 1, 1874.

Dakota group: Kansas.

**Protophyllum? Mudgii** (Lx.).

*Quercus Mudgii* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 302,  
1871 [1872].

*Protophyllum Mudgii* Lx. Cret. Fl., p. 106, pl. xviii, f. 3, 1874.

Dakota group: Kansas.

**Protophyllum multinerve** Lx. Cret. Fl., p. 105, pl. xviii, f. 1, 1874;  
Fl. Dak. Gr., p. 191, pl. xliii, f. 2; lxxv, f. 1, 1892.

*Pterospermites multinervis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.  
Terr., p. 302, 1871 [1872].

Dakota group: Southern Kansas.

**Protophyllum nanaimo** Dn. Trans. Roy. Soc. Canada, vol. i, sec.  
iv, p. 28, pl. viii, f. 35, 1882 [1883].

Upper Cretaceous: Nanaimo; Baynes Sound.

**Protophyllum nebrascense** Lx. Cret. Fl., p. 103, pl. xxvii, f. 3, 1874.

Dakota group; Decatur, Nebraska.

**Protophyllum obovatum** Newby. Fl. Amboy Clays, p. 128, pl. xxxviii,  
f. 4, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

**Protophyllum præstans** Lx. Fl. Dak. Gr., p. 188, pl. xli, f. 2, 3; pl.  
xlii, f. 3, 4, 1892.

Dakota group: Kansas.

**Protophyllum pseudospermoides** Lx. Fl. Dak. Gr., p. 194, pl. lix,  
f. 2, 1892.

Dakota group: Kansas.

**Protophyllum pterospermifolium** Lx. Fl. Dak. Gr., p. 195, pl. lix, f.  
1, 1892.

Dakota group: Kansas.

**Protophyllum quadratum** Lx. Cret. Fl., p. 104, pl. xix, f. 1, 1874.

*Pterospermites quadratus* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr.,  
p. 301, 1871 [1872].

Dakota group: South of Fort Harker, Kansas.

**Protophyllum querciforme** Hollick. Bull. Torr. Bot. Club, vol. xxii, p. 227, pl. cccxxvii, f. 1, 1895.

Dakota group: Fort Harker, Kansas.

**Protophyllum rugosum** Lx. Cret. Fl., p. 105, pl. xvii, f. 1, 2; pl. xix, f. 3, 1874.

Pterospermites rugosus Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 426, 1872 [1873].

Dakota group: South of Fort Harker, Kansas; Coal Brook, Northwest Territory.

**Protophyllum Sternbergii** Lx. Cret. Fl., p. 101, pl. xvi; pl. xviii, f. 2, 1874; Fl. Dak. Gr., p. 189, pl. xlii, f. 1, 1892.

Pterospermites Sternbergii Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 425, 1872 [1873].

Dakota group: Fort Harker, Kansas.

**Protophyllum? trilobatum** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 397, 1875 [1876]. [Apparently not afterward recognized.]

Dakota group: Kansas.

**Protophyllum undulatum** Lx. Fl. Dak. Gr., p. 189, pl. xlii, f. 2, 1892.

Dakota group: Kansas.

**Protophyllum** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 63, pl. xi, f. 46, 47, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver Island; Nanaimo.

**PRUNUS** (Tournefort.) Linnaeus. Syst., ed. i, 1735.

**Prunus? acutifolia** Newby. Fl. Amboy Clays, p. 90, pl. xiv, f. 1, 1895 [1896.]

Amboy clay: Woodbridge, New Jersey.

**Prunus (Amygdalus) antecedens** Lx. Fl. Dak. Gr., p. 144, pl. lv, f. 4, 1892.

Dakota group: Kansas.

**Prunus caroliniana** (Mill.) Ait. Hort. Kew., ed. i, vol. ii, p. 163, 1789.

Prunus caroliniana Michx. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 6, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Prunus cretacea** Lx. Am. Journ. Sci., vol. xlvi, p. 102, 1868.

Dakota group: Lancaster County, Nebraska.

**Prunus dakotensis** Lx. Cret. and Tert. Fl., p. 237, pl. xlvIA, f. 8, 1883.

Fort Union group: Bad Lands, Dakota.

**Prunus Parlatorii** (Heer) Lx. = *Andromeda Parlatorii*.

**Prunus variabilis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 509, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

**PSILOTTES** Goldenberg. Fl. Sarapontana Foss., heft i, p. 13, 1855.

**Psilotites inermis** (Newby.) Schimp. Pal. Vég., vol. iii, p. 547, 1874.

Psilotum inerme Newby. Later Extinct Floras, p. 38, 1868.

Fort Union group: Fort Union.

Psilotum inerme Newby. = *Psilotites inermis*.



**PTENOSTROBUS** Lesquereux. Cret. Fl., p. 114, 1874.

*Ptenostrobos nebrascensis* Lx. Cret. Fl., p. 114, pl. xxiv, f. 1, 1874.

Dakota group: Winnebago Village, Missouri River.

**PTERIS** Linnaeus. Gen. Pl., p. 322, 1737.

*Pteris affinis* Lx. = *Osmunda affinis* = *Asplenium subsimplex*.

*Pteris anceps* Lx. = *Osmunda affinis* = *Asplenium subsimplex*.

*Pteris dakotensis* Lx. Fl. Dak. Gr., p. 24, pl. i, f. 2, 3, 1892.

Dakota group: Kansas.

*Pteris elegans* Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Miocene?: Currant Creek, Oregon.

*Pteris erosa* Lx. = *Asplenium erosum*.

*Pteris* (*Oleandra*) *glossopteroides* Dn. Trans. Roy. Soc. Canada, vol. i., sec. iv, p. 24, pl. iv, f. 16, 1882 [1883].

Upper Cretaceous: Protection Island.

*Pteris Gardneri* Lx. = *Gymnogramma Gardneri*.

*Pteris pinnæformis* Heer, Lx. = *Pteris pseudopinnæformis*.

*Pteris pseudopinnæformis* Lx. Tert. Fl., p. 52, pl. iv, f. 3, 4, 1878.

*Pteris pinnæformis* Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 384, 1870 [1871]; *ibid.*, p. 283, 1871 [1872].

Denver group: Golden, Colorado.

*Pteris Russellii* Newby. Proc. U. S. Nat. Mus., vol. v, p. 503, 1882 [1883].

Laramie group: Vermejo Canyon, New Mexico.

*Pteris Sitkensis* Heer. Fl. Foss. Alask., p. 21, pl. i, f. 7a, 1869.

Eocene?: Near Sitka, Alaska; Mackenzie River.

*Pteris subsimplex* Lx. = *Asplenium subsimplex*.

*Pteris undulata* Lx. = *Asplenium subsimplex*.

**PTEROCARYA** Kunth. Ann. Sci. Nat., 1st ser., vol. ii, p. 345, 1824.

*Pterocarya americana* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 417, 1873 [1874]; Tert. Fl., p. 290, pl. lviii, f. 3, 1878.

Green River group: Middle Park, Colorado.

*Pterocarya retusa* Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 56, 1888.

Denver group: Golden, Colorado.

**PTEROPHYLLUM** Brongniart. Prodr. Hist. Veg. Foss., p. 95, 1828.

*Pterophyllum*? *Haydenii* Lx. = *Podozamites Haydenii*.

*Pterophyllum californicum* Font. in Diller and Stanton. Bull. Geol. Soc. Am., vol. v, p. 450, 1894. Nomen nudum.

Knoxville beds: Tehama County, California.

**PTEROSPERMITES** Heer. Fl. Tert. Helv., vol. iii, p. 36, 1859.

*Pterospermites cordatus* Ward. Bull. U. S. Geol. Surv., no. 37, p. 93, pl. xli, f. 4, 1889.

Fort Union group: Seven-Mile Creek, Montana.

**Pterospermites cupanioides** (Newby.) Kn. Proc. U. S. Nat. Mus., vol. xvi, p. 35, pl. ii, f. 1, 1893.

Phyllites cupanioides Newby. Later Extinct Floras, p. 74, 1868.

Pterospermites Whitei Ward. Bull. U. S. Geol. Surv., no. 37, p. 94, vol. xvi, f. 5, 6, 1887.

Fort Union group: Glendive? Montana.

**Pterospermites dentatus** Heer. Fl. Foss. Arct., vol. i, p. 138, pl. xxi, f. 15*b*; xxiii, f. 6, 7, 1868; Lesquereux, Proc. U. S. Nat. Mus., vol. x, p. 45, 1887.

Miocene?: Mackenzie River; Upper Kanab Valley, Utah.

**Pterospermites grandidentatus** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

**Pterospermites Haydenii** Lx. = *Protophyllum Haydenii*.

**Pterospermites longeacuminatus** Lx. Fl. Dak. Gr., p. 186, pl. lix, f. 3, 1892.

Dakota group: Kansas.

**Pterospermites modestus** Lx. Fl. Dak. Gr., p. 186, pl. lviii, f. 5, 1892.

Dakota group: Kansas.

**Pterospermites minor** Ward. Bull. U. S. Geol. Surv., no. 37, p. 95, pl. xlii, f. 1-3, 1887.

Fort Union group: Burns's Ranch, Montana.

**Pterospermites multinervis** Lx. = *Protophyllum multinerve*.

**Pterospermites quadratus** Lx. = *Protophyllum quadratum*.

**Pterospermites rugosus** Lx. = *Protophyllum rugosum*.

**Pterospermites spectabilis** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 480, pl. xliii, f. 15*b*; liii, f. 1-4, 1869; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 27, 1888.

Miocene: Spanish Peak, California.

**Pterospermites Sternbergii** Lx. = *Protophyllum Sternbergii*.

**Pterospermites Whitei** Ward = *Pterospermites cupanioides*.

**Pterospermites** sp. Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 53, 1888.

Denver group: Golden, Colorado.

**Pterospermites** sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**Pterospermites** sp. Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.

Montana formation: Point of Rocks, Wyoming.

**PYRUS** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Pyrus cretacea** Newby. Later Extinct Floras, p. 12, 1868.

Dakota group: Kansas.

**QUERCINIUM** Unger in Endlicher. Gen. Pl., suppl. ii, p. 101.

**Quercinium Knowltoni** Felix. Zeitschr. d. Deutschen Geolog. Gesell. Jahrg. 1896, p. 250, pl. vi, f. 2, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

**QUERCOPHYLLUM** Fontaine. Potomac Fl., p. 307, 1889.

**Quercophyllum grossedentatum** Font. Potomac Fl., p. 307, pl. clvi, f. 9, 1889.

Potomac formation: Near Brooke, Virginia.

**Quercophyllum tenuinerve** Font. Potomac Fl., p. 308, pl. cxlix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**QUERCUS** (Tournefort) Linnaeus. Syst., ed. i, 1735.

*Quercus acrodon* Lx. = *Quercus Lesquereuxiana*.

**Quercus æmulans** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 288, 1871 [1872].

Eocene?: Washakie Station, Wyoming.

**Quercus alnoides** Lx. Fl. Dak. Gr., p. 54, pl. vii, f. 3, 1892.

Dakota group: Kansas.

*Quercus anceps* Lx. = *Diospyros ambigua*.

**Quercus angustiloba** Al. Br. in Ludwig. Paleontogr., vol. viii, p. 103, pl. xxxvi, f. 3, 1861; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 378, 1872 [1873]; Tert. Fl., p. 161, pl. xxi, f. 4, 5, 1878.

Laramie group: Golden, Colorado.

Eolignitic?: Cross Lake, Louisiana?

**Quercus antiqua** Newby. Later Extinct Floras, p. 26, 1868.

Dakota group?: Banks of Rio Dolores, Utah.

**Quercus aquamara** (Ward) n. comb.

*Hedera aquamara* Ward. Bull. U. S. Geol. Surv., no. 37, p. 59, pl. xxvi, f. 7, 1887.

Laramie group: Black Buttes, Wyoming.

*Quercus attenuata*? Göpp. Lx. = *Quercus viburnifolia*.

**Quercus banksiæfolia** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 522, 1863.

——: Bellingham Bay, Washington.

*Quercus benzoin*? Lx. = *Persea Leconteana*.

**Quercus bicornis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 24, pl. ix, f. 3, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Quercus Boweniana** Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 6, pl. ii, f. 5, 6, 1878.

Miocene: California.

*Quercus Breweri* Lx. = *Quercus consimilis* (f. 5-8) and *Q. paucidentata* (f. 9).

**Quercus carbonensis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 25, pl. ix, f. 6, 1887.

*Dryophyllum basidentatum* Ward. Op. cit., p. 27, pl. xi, f. 2, 1887.

Laramie?: Carbon, Wyoming.

**Quercus castaneopsis** Lx. Cret. and Tert. Fl., p. 155, pl. xxviii, f. 10, 1883.

Green River group: Uinta County, formerly but incorrectly called Randolph County, Wyoming.

**Quercus castanoides** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Eocene: Green River, Wyoming.

**Quercus castanopsis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Fort Union group: Yellowstone River.

**Quercus celastrifolia** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

**Quercus chamissonis** Heer. Öfversigt k. Vetensk.-Akad. Förhandlingar 1868, p. 64, 1868; Fl. Foss. Alask., p. 33, pl. vi, f. 7, 8, 1869.

Eocene?: Port Graham, Alaska.

**Quercus chlorophylla** Ung. = *Quercus? chlorophylloides*.

**Quercus? chlorophylloides** nom. nov.

*Quercus chlorophylla* Ung. Chlor. Prot., p. 111, pl. xxxi, f. 1, 18—; Lx., Am. Journ. Sci., vol. xlv, p. 206, 1868; Trans. Am. Phil. Soc., vol. xiii, p. 416, pl. xvii, f. 5-7, 1869; Tert. Fl., p. 151, pl. xxi, f. 3, 1878.

Eolignitic: Mississippi.

Denver group: [Locality not mentioned.]

Laramie group: Marshall and Erie, Colorado; Fishers Peak, New Mexico.

[NOTE.—After looking up the original of the European form, as well as many other figures, I am convinced that our leaf is not the same. Our leaf is ovate; the European are more nearly obovate. There is also some doubt as to our leaf belonging to *Quercus*. In absence of more definite information I have changed the name but retained it under *Quercus*.—F. H. K.]

**Quercus chrysolepis** Leib. forma **montana** Lx. Proc. U. S. Nat. Mus., vol. x, p. 38, 1887.

Miocene: Placer County, California.

**Quercus cineroides** Lx. Tert. Fl., p. 152, pl. xxi, f. 6, 1878.

—?: Location and formation unknown.

**Quercus Cleburni** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 399, 1873 [1874]; Tert. Fl., p. 154, pl. xx, f. 2, 1878. [Of doubtful validity.]

Laramie group: Black Buttes, Wyoming.

**Quercus coloradensis** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

**Quercus competens** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 370, 1875 [1876]. [Apparently not afterwards referred to by author.]

Montana formation?: Point of Rocks, Wyoming.

**Quercus consimilis** Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

*Quercus Breweri* Lx. Cret. and Tert. Fl., p. 246, pl. liv, f. 5-8 [not f. 9], 1883.

Miocene: Bridge Creek and John Day Valley, Oregon.

**Quercus convexa** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 4, pl. i, f. 13-17, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 5, 6, 1883.

Miocene: Table Mountain, California.

*Quercus coriacea* Newby. Bost. Journ. Nat. Hist., vol. vii, p. 521, 1863.

—: Bellingham Bay, Washington.

*Quercus! crassinervi(s)a?* Göpp. Zeitschr. Deutsch. Geol. Ges., vol. iv, p. 491, 1852; Lesquereux, Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 427, pl. K, f. 1, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

*Quercus Crossii* Lx. Proc. U. S. Nat. Mus., vol. x, p. 39, pl. ii, f. 5, 6, 1887.

Denver group: Silver Cliff, Colorado.

*Quercus cuneata* Newby. Later Extinct Floras, p. 25, 1868.

Dakota group: Blackbird Hill, Nebraska.

*Quercus dakotensis* Lx. Cret. and Tert. Fl., p. 39, 1883; Fl. Dak. Gr., p. 56, pl. vii, f. 4, 1892.

Dakota group: Kansas.

*Quercus Dallii* Lx. Proc. U. S. Nat. Mus., vol. v, p. 446, pl. viii, f. 2-5, 1882 [1883].

Eocene?: Cook Inlet, Alaska.

Eocene?: North Fork Similkameen River, British Columbia.

*Quercus Dawsoni* nom. nov.

*Quercus platania* Heer. Dawson, Trans. Roy. Soc. Canada, vol. vii, sec. iv, p. 72, pl. xi, 1889. [Not *Q. platania* Heer.]

Fort Union group: Near Calgary, and Bow River, Canada.

*Quercus Dentoni* Lx. Cret. and Tert. Fl., p. 224, pl. xlviii, f. 1, 11, 1883.

Fort Union group: Bad Lands, Dakota.

Montana formation?: Point of Rocks, Wyoming?

*Quercus distincta* Lx. Mem. Mus. Comp. Zool., vol. vi, no. 2, p. 6, pl. ii, f. 7-9, 1878.

*Quercus voyana* Lx. Op. cit., p. 8, pl. ii, f. 12, 1878.

Miocene: Chalk Bluffs, California.

*Quercus doljensis* Pilar. Fl. Foss. Susedana, p. 37, pl. vii, f. 14, 1883; Ward, Bull. U. S. Geol. Surv., no. 37, p. 25, pl. ix, f. 4, 5, 1887.

*Rhus pseudo-Meriani* Lx. Tert. Fl., p. 293, pl. lviii, f. 11, 1878.

Laramie group: Black Buttes and Hodges Pass, Wyoming.

*Quercus drymeja* Ung. Chlor. Prot., p. 113, pl. xxxii, f. 1-4, 1847; Lx., Tert. Fl., p. 157, pl. xix, f. 14, 1878; Cret. and Tert. Fl., p. 154, pl. xxviii, f. 12 [not p. 245, pl. liv, f. 4], 1883.

Green River group: Florissant, Colorado.

Miocene: Bridge Creek, Oregon.

*Quercus drymeja* Ung. var.? Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 292, 1871 [1872].

Laramie group? Evanston, Wyoming.

*Quercus dubia* Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882, [1883].

Tertiary: Tongue River, Wyoming.

*Quercus elæna* Ung. Ohlor. Prot., p. 112, pl. xxxii, f. 4, 1847; Lesquereux, Cret. and Tert. Fl., p. 155, pl. xxviii, f. 11, 13, 1883.

——: Florissant, Colorado.

*Quercus elæncoides* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 4, pl. i, f. 9-12, 1878.

Miocene: Table Mountain, California.

Green River group: Florissant, Colorado.

*Quercus elkoana* Lx. = *Carpinus grandis*.

*Quercus elliptica* Newby. Bost. Journ. Nat. Hist., vol. vii, p. 523, 1863.

——: Bellingham Bay, Washington.

*Quercus ellisiana* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Tert. Fl., p. 155, pl. xx, f. 4, 5, 6, 7, 8, 1878.

*Quercus Pealei* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Kn., Bull. U. S. Geol. Surv., no. 105, p. 53, 1893.

Livingston beds: Hodson coal mine, near Bozeman, Montana.

Laramie group: Head of Fir Canyon, near Bozeman, Montana.

*Quercus? ellsworthianus* Lx. Cret. Fl., p. 65, pl. vi, f. 7, 1878.

*Quercus ellsworthianus* Lx. Am. Jour. Sci., vol. xlv, p. 96, 1868.

*Laurophyllum ellsworthianum* Lx. Fl. Dak. Gr., p. 95, pl. xiii, f. 7, 1892.

Dakota group: Kansas and Nebraska.

*Quercus Evansii* Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

——: Bellingham Bay, Washington.

*Quercus falcata* Michx. Knowlton, Am. Geol., vol. xviii, p. 371, 1896.

Glacial: Morgantown, West Virginia.

*Quercus flexuosa* Newby. Bost. Journ. Nat. Hist., vol. vii, p. 521, 1863.

Cretaceous: Bellingham Bay, Washington.

*Quercus? fraxinifolia* Lx. Tert. Fl., p. 154, pl. xx, f. 3, 1878.

*Quercus Laharpi* Gaud. Nouv. Mém. Soc. Helv. Sci. Nat., vol. xvii, p. 45, pl. iii, f. 5, 10, 1860; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872].

Livingston beds: Bozeman coal field, Montana.

Eocene?: ?Cherry Creek, Oregon.

*Quercus furcinervis* Rossm. Lx. = *Quercus furcinervis americana* [pl. liv, f. 1, 2] and *Quercus paucidentata* [pl. liii, f. 8-14].

*Quercus furcinervis americana* var. nov.

*Phyllites furcinervis* Rossm. Verst. Braunk. von Altsattle in Böhmen, p. 33, pl. vii, f. 26-31, 1840.

*Quercus furcinervis* (Rossm.) Ung. Syn. v. Fl. Foss., p. 217, 1845; Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1873 [1874]; Cret. and Tert. Fl., p. 244, pl. liv, f. 1, 2, 1883.

Miocene: Bridge Creek, Oregon; Plumas County, California; Cherry Creek, Oregon; Selma, Texas.

*Quercus Furuhielmi* Heer. Öfversigt k. Vetensk.-Akad. Förhandlgar., 1868, p. 64, 1868; Fl. Foss. Alask., p. 32, pl. v, f. 10; pl. vi, f. 1, 2, 1869.

Eocene?: Port Graham, Alaska.

**Quercus Gaudini** Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]; Proc. U. S. Nat. Mus., vol. x, p. 39, pl. ii, f. 7, 8, 1887.

—?: Warm Spring Canyon; Bellingham Bay; Upper Kanab Valley, Utah.

**Quercus glascoena** Lx. Fl. Dak. Gr., p. 55, pl. vi, f. 6, 1892.

Dakota group: Kansas.

**Quercus Godeti?** Heer. Fl. Tert. Helv., vol. ii, p. 50, pl. lxxviii, f. 10, 11, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1871 [1872]; Tert. Fl., p. 153, pl. xx, f. 1, 1878.

Livingston beds: Bozeman coal field, Montana.

**Quercus Gœpperti** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 7, pl. ii, f. 11, 1878.

Miocene: Chalk Bluffs, California.

**Quercus goldianus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1873 [1874]. [Not recognized by its author after first description.]

Denver group?: Golden, Colorado.

*Quercus gracilis* Newby. = *Dryophyllum subfalcatum*.

**Quercus Haidingeri** Ett. Foss. Fl. v. Wien., p. 12, pl. ii, f. 1, 1851; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 387, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 313, 1874 [1876]; Tert. Fl., p. 156, pl. xx, f. 9, 10, 1878.

Denver group?: Golden, Colorado.

—?: Locality of American types unknown.

**Quercus Haydeni** Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 205, 1869.

*Quercus Haydenii* Lx. Tert. Fl., p. 157, pl. xix, f. 10, 1878.

Laramie: Rock Creek, Laramie Plains, Wyoming.

**Quercus hexagona** Lx. Am. Journ. Sci., vol. xlvi, p. 95, 1868; Cret. Fl., p. 64, pl. v, f. 8, 1874; Fl. Dak. Gr., p. 56, pl. vii, f. 5, 1892.

Dakota group: Cass County, Nebraska; Delphos, Kansas.

**Quercus (Dryophyllum) hieracifolia** (Deb.) Hos. and v. d. Marek, Fl. d. Westf. Cret. Form., p. 166, pl. 31, f. 85–88, 1880; Lx., Fl. Dak. Gr., p. 58, pl. iii, f. 15, 1892.

Dakota group: Kansas.

**Quercus Holmesii** Lx. Fl. Dak. Gr., p. 58, 1892.

*Dryophyllum (Quercus) salicifolium* \* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 340, pl. viii, f. 2, 1874 [1876]. [\*Name preoccupied by *Q. salicifolia* Newby., q. v.]

*Dryophyllum (Quercus) Holmesii* Lx. Cret. and Tert. Fl., p. 38, pl. iv, f. 8, 1883.

Upper Cretaceous: Port McNeill, Vancouver.

Dakota group?: San Juan River, Southwestern Colorado.

**Quercus horniana** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. v, f. 6, 1888.

Miocene: John Day Valley, Oregon.

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**Quercus (Dryophyllum) Hosiana** Lx. Fl. Dak. Gr., p. 57, pl. iii, f. 14, 1892.

Dakota group: Kansas.

**Quercus idahoensis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 729, pl. cii, f. 4, 1898.

Payette formation: Marsh, Idaho.

**Quercus ilicoides?** Heer. Lesquereux. = *Ilix dissimilis*.

**Quercus imbricaria** Michx., *fossilis* Lx., Proc. U. S. Nat. Mus., vol. x, p. 39, 1887.

Pleistocene?: Bridgeton, New Jersey.

**Quercus Johnstrupi** Heer? Fl. Foss. Aret., vol. vii, p. 24, pl. lvi, f. 7-12a, 1883; Newby., Fl. Amboy Clays, p. 69, pl. xix, f. 7. 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Quercus kanseana** (Lx.) n. comb.

*Hamamelites kansaseana* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 355, pl. vii, f. 4, 1874 [1876].

*Hamamelites kansaseanus* Lx. Cret. and Tert. Fl., p. 70, pl. iv, f. 5, 1883.

*Alnus kanseana* Lx. Cret. Fl., p. 62, pl. xxx, f. 8, 1878.

Dakota group: Kansas.

**Quercus (Dryophyllum) latifolia** Lx. Fl. Dak. Gr., p. 58, 1892.

*Dryophyllum (Quercus) latifolium* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 393, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 340, pl. vi., f. 1, 1874 [1876]; Cret. and Tert. Fl., p. 37, pl. iv, f. 1, 2, 1883.

Dakota group: Kansas.

**Quercus Laharpi** Gaud. Lx. = *Quercus?* *fraxinifolia*.

**Quercus laurifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Fort Union group: Fort Berthold, North Dakota.

**Quercus Lesquereuxiana** nom. nov.

*Quercus acrodon*\* Lx. Am. Journ. Sci., vol. xlv, 2d ser, p. 205, 1869; Tert. Fl., p. 158, pl. xix, f. 11-13, 1878.

[\**Q. acrodon* Lx., 1868 antedated by *Q. acrodon* Massal., 1853.]

Laramie group?: Rock Creek, Laramie Plains, Wyoming.

**Quercus lonchitis** Ung. Gen. et Sp. Pl. Foss., p. 403, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 6, 1871 [1872]; Proc. U. S. Nat. Mus., vol. xi, p. 22, 1888.

Eocene?: Green River, Wyoming.

Miocene: Cherry Creek, Oregon.

**Quercus Lyellii** Heer. Phil. Trans., vol. clii, pt. 2, p. 1058, pl. lxiii, f. 2-9; lxiv, f. 1-4; lxv, f. 12b; lxvi, f. 1, 2; lxviii, f. 4, 5, 1862; Lx., Am. Journ. Sci., vol. xlv, p. 206, 1868; Trans. Am. Phil. Soc., vol. xiii, p. 415, pl. xvii, f. 1-3, 1869.

Eolignitic: Mississippi.

**Quercus mediterranea** Ung. Chlor. Prot., p. 114, pl. xxxii f. 5-9, 1847; Lx., Cret. and Tert. Fl., p. 153, pl. xxviii, f. 9, 1883. •

Green River group: Florissant, Colorado.

**Quercus minor** (Marsh.) Sargent.

*Quercus obtusiloba* Michx. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895.

Pleistocene: Don River, Canada.



**Quercus Moorii** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 415, pl. xvi, f. 1-3, 1869.

Eolignitic: Mississippi.

Eocene: Lassen County, California.

**Quercus morrisoniana** Lx. Cret. and Tert. Fl., p. 40, pl. xvii, f. 1, 2, 1883; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiii, f. 11, 12, 1897.

Dakota group: Morrison, Colorado.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Quercus Mudgii** Lx. = *Protophyllum* Mudgii.

**Quercus multinervis** Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

——: Nanaimo, Vancouver Island.

**Quercus mystifolia** Willd. Lesquereux, Am. Journ. Sci., vol. xxvii, p. 363, 1859; Geol. Tenn., p. 427, pl. K, f. 3, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Quercus negundoides** Lx. Ann. Rept. U. S. Geol. and Geog. Surv. Terr., p. 292, 1871 [1872]; Tert. Fl., p. 161, pl. xxi, f. 2, 1878.

Laramie group: Evanston, Wyoming.

**Quercus neriifolia** Al. Br. Unger, Gen. et Sp. Pl. Foss., p. 403, 1850; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 413, 1873 [1874]; Tert. Fl., p. 150, pl. xix, f. 4, 5, 1878. [Identification very doubtful.]

Laramie group: Raton Mountains, New Mexico.

——?: Pikes Peak, Colorado.

**Quercus nevadensis** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 5, pl. ii, f. 3, 4, 1878.

*Quercus Olafseni* Heer. Lesquereux, Cret. and Tert. Fl., p. 245, pl. liv, f. 3, 1883.

Miocene: Chalk Bluffs, California.

**Quercus ? Novæ-Cæsareæ** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiii, f. 9, 10, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

*Quercus obtusiloba* Mx. = *Quercus minor*.

**Quercus ? (Dryophyllum) occidentalis** (Dn.) n. comb.

*Dryophyllum occidentale* Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 58, pl. vii, f. 17, 18, 1893 [1894].

*Dryophyllum neillianum* Dn. Op. cit., p. 58, pl. vii, f. 19, 1893 [1894].

*Dryophyllum elongatum* Dn. Op. cit., p. 58, pl. vii, f. 20, 1893 [1894].

*Dryophyllum* sp., Dn. Op. cit., p. 58, pl. xii, f. 59, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

**Quercus Olafseni** Heer. Fl. Foss. Arct., vol. i, p. 109, pl. x, f. 5; pl. xi, f. 7; pl. xlvi, f. 10; p. 138, pl. xxii, f. 17, 1868; Lx., Cret. and Tert. Fl., p. 224, pl. xlviii, f. 4, 1883.

Eocene?: Cherry Creek, Oregon; Lassen County, California.

Miocene?: Table Mountain, California; Mackenzie River.

Fort Union group: Bad Lands, Dakota.

*Quercus Olafseni* Heer. Lx. [Cret. and Tert. Fl., p. 245, pl. liv, f. 3] = *Quercus nevadensis*.

**Quercus Osbornii** Lx. Cret. and Tert. Fl., p. 154, pl. xxxviii, f. 17, 1883.

Green River group: Florissant, Colorado.

**Quercus pandurata** Heer. Öfversigt k. Vetensk.-Akad. Förhandlingar. 1868, p. 64, 1868; Fl. Foss. Alask., p. 33, pl. vi, f. 6, 1869.

Eocene?: Port Graham, Alaska.

**Quercus paucidentata** Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

*Quercus furcinervis* Rossm. Lesquereux, Cret. and Tert. Fl., p. 244, pl. liii, f. 8-14 [not pl. liv, f. 1-2], 1883.

*Quercus Breweri* Lx. Cret. and Tert. Fl., p. 246, pl. liv, f. 9 [not f. 5-8], 1883.

——: Bridge Creek and John Day Valley, Oregon.

**Quercus payettensis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 730, pl. cii, f. 9, 1898.

Payette formation: Jackass Creek, Boise County, Idaho.

*Quercus Pealei* Lx. = *Quercus ellisiana*.

*Quercus platania* Heer Dawson = *Quercus Dawsoni*.

*Quercus platania* Heer Lx. = *Platanus cordata*.

*Quercus platania* var. *rotundifolia* Lx. = *Dombeyopsis platanoides*.

**Quercus platinervis** Lx. Am. Journ. Sci., vol. xxvii, p. 361, 1859.

——: Nanaimo, Vancouver Island.

**Quercus poranoides** Lx. Cret. Fl., p. 66, pl. xxx, f. 9, 1874.

Dakota group: Kansas.

**Quercus pseudo-alnus** Ett. Abhandl. d. k. k. geol. Reichsanstalt, vol. i, abt. iii, p. 5, pl. i, f. 7, 1852; Lx., Cret. and Tert. Fl., p. 244, pl. liii, f. 1-7, 1883.

Miocene: John Day Valley, Oregon.

**Quercus pseudo-castanea** Göpp. in Dunker et Meyer. Palæontogr., ii, pl. xxxv, f. 1, 1853; Heer, Öfversigt k. Vetensk.-Akad. Förhandlingar. 1868, p. 64, 1868; Fl. Foss. Alask., p. 32, pl. vi, f. 3-5, 1869.

Eocene?: Port Graham, Alaska.

**Quercus pseudo-chrysophylla** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 60, Appen., 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

**Quercus pseudo-lyrata** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 8, pl. ii, f. 1, 2, 1878; Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. x, f. 1, 1888.

Miocene?: California.?

Miocene: John Day Valley, Oregon.

**Quercus pseudo-lyrata acutiloba** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. xi, f. 1, 1888.

Miocene: John Day Valley, Oregon.

**Quercus pseudo-lyrata angustiloba** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. xi, f. 2, 1888.

Miocene: John Day Valley, Oregon.

**Quercus pseudo-lyrata brevifolia** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. x, f. 2, 1888.

Miocene: John Day Valley, Oregon.

**Quercus pseudo-lyrata latifolia** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. xii, f. 1, 1888.

Miocene: John Day Valley, Oregon.

**Quercus pseudo-lyrata obtusiloba** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 18, pl. x, f. 3, 1888.

Miocene: John Day Valley, Oregon.

**Quercus pyrifolia** Lx. Cret. and Tert. Fl., p. 154, pl. xxviii, f. 14, 1883.  
Green River group: Florissant, Colorado.

**Quercus retracta** Lx. Trans. Am. Phil. Soc., vol. xii, p. 416, pl. xvi, f. 4, 5, 1869.

Eolignitic: Mississippi.

**Quercus (Dryophyllum) rhamnoides** Lx. Fl. Dak. Gr., p. 57, p. xlvi, f. 4, 1892.

Dakota group: Kansas.

**Quercus Saffordi** Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; 2d Rept. of Geol. Recon. of Ark., p. 319, pl. vi, f. 3, 1860; Geol. Tenn., p. 427, pl. K, f. 2a, 2b, 2c, 1869; Proc. U. S. Nat. Mus., vol. xi, p. 13, pl. v, f. 1-3, 1888.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Quercus salicifolia** Newby. Later Extinct Floras, p. 24, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Quercus semialatus** Lx. = *Anisophyllum semialatum*.

**Quercus semi-elliptica** Göpp. Lx. = *Planera longifolia*.

**Quercus serra** Ung. Ohlor. Prot., p. 109, pl. xxx, f. 5-7, 1847; Lx., Cret. and Tert. Fl., p. 153, 1883.

Green River group: Florissant, Colorado.

**Quercus simplex** Newby. Proc. U. S. Nat. Mus., vol. v, p. 505, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Quercus simulata** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 728, pl. ci, f. 3, 4; cii, f. 1, 2, 1898.

Payette formation: Marsh, Idaho.

**Quercus sinuata** Newby. Later Extinct Floras, p. 27, 1868.

Dakota group: Banks of Rio Dolores, Utah.

**Quercus spurio-ilex** Kn. in Lx. Fl. Dak. Gr., p. 53, pl. xlviii, f. 3, 1892.

Dakota group: Kansas.

**Quercus Steenstrupiana** ? Heer. Fl. Foss. Arct., vol. i, p. 109, pl. xi, f. 5; xlv, f. 8, 9, 1868.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

**Quercus stramineus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 378, 1872 [1873]; Tert. Fl., p. 151, pl. xix, f. 6, 7, 1878.

Laramie group: Golden, Colorado.

**Quercus Sullyi** Newby. Proc. U. S. Nat. Mus., vol. v, p. 506, 1882 [1883].

Fort Union group: Fort Berthold, North Dakota.

**Quercus suspecta** Lx. Fl. Dak. Gr., p. 52, pl. xlvii, f. 7; pl. xlviii, f. 1, 2, 1892.

Dakota group: Kansas.

**Quercus transgressus** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 59, Appen., 1878.

Miocene: Oregon Creek, 20 miles north of Chalk Bluffs, California.

**Quercus triangularis** Göpp. Lx. = **Quercus viburnifolia**.

**Quercus valdensis** Heer. Fl. Tert. Helv., vol. ii, p. 49, pl. lxxviii, f. 15, 1856; Lx., Tert. Fl., p. 153, pl. xix, f. 8, 1878.

Denver group?: Rock Creek, Laramie Plains, Wyoming.

**Quercus viburnifolia** Lx. Tert. Fl., p. 159, pl. xx, f. 11, 12, 1878.

**Quercus triangularis** Göpp. [Ex. p.]. In Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873].

**Quercus attenuata?** Göpp. In Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 398, 1873 [1874].

Denver group: Golden, Colorado.

Laramie group: Sand Creek, Colorado; Black Buttes, Wyoming.

**Quercus victoriae** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 27, 1882 [1883].

Upper Cretaceous: Newcastle Island, Nanaimo, Protection Island, Port McNeill, Vancouver Island.

**Quercus virens** Mx. = **Quercus virginiana**.

**Quercus virginiana** Miller. Dict., ed. viii, no. 16, 1768.

**Quercus virens** Michx.: Lesquereux, Am. Journ. Sci., vol. xxvii, p. 364, 1859.

Pleistocene: Banks of Mississippi, near Columbus, Kentucky.

**Quercus Voyana** Lx. = **Quercus distincta**.

**Quercus Wardiana** Lx. Fl. Dak. Gr., p. 53, pl. vii, f. 1, 1892.

Dakota group: Kansas.

**Quercus Whitei** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 46, 1888.

Denver group: Golden, Colorado.

**Quercus wyomingiana** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 400. 1872 '1873]. [Not regarded by its author after first mention.]

Laramie: Black Buttes, Wyoming.

**Quercus cf. cuspidata** (Rossm.) Ung. Syn. Fl. Foss., p. 217, 1845. Lesquereux, Proc. U. S. Nat. Mus., vol. xi, p. 12, 1888.

**Phyllites cuspidatus** Rossm. Verst. Braunk. von Altsattle in Böhmen., p. 36, pl. ix, f. 38, 39, 1840.

Eolignitic: Boaz, Graves County, Kentucky.

**Quercus** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: South Amboy, New Jersey.

**Quercus** sp., Dn. Geol. Surv. Canada, Rept. of Prog. for 1872-73. Appen. V, p. 68, 1873.

Upper Cretaceous: Hornby Island, British Columbia.

Cretaceous: Vancouver Island, British Columbia.

*Quercus* sp., Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 27, 1886 [1887].

Upper Laramie group: Great Valley.

*Quercus*? sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 89, f. (in text) 28, 1890.

Eocene?: Similkameen Valley, British Columbia.

*Quercus* sp., Dn. Geol. Surv. Canada, Rept. Prog. for 1879-80. p. 54A, 1881.

Tertiary?: Roche Percée, Souris River.

*Quercus* sp., Hollick. Bull. Torr. Bot. Club, vol. xix, p. 332, 1892.

Miocene?: Bridgeton, New Jersey.

*Quercus*? sp., Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 131, pl. xiv, f. 9, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

*Quercus* sp., Kn. Bull. Geol. Soc. Am., vol. viii, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

*Quercus*? sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 730, 1898.

Payette formation: Marsh, Idaho.

**RHAMNACINIUM** Felix. Zeitschr. d. Deutschen geol. Gesell., vol. xlvi, p. 89, 1894.

*Rhamnacinium radiatum* Felix. Zeitschr. d. Deutschen geol. Gesell. Jahr. 1896, p. 252, pl. vi, f. 3, 1896.

Miocene: Amethyst Mountain, Yellowstone National Park.

**RHAMNITES** Forbes. Quat. Journ. Geol. Soc. Lond., vol. vii, p. 103, 1851.

*Rhamnites apiculatus* Lx. Fl. Dak. Gr., p. 171, pl. xxxvii, f. 8-13, 1892.

Dakota group: Kansas.

*Rhamnites concinnus* Newby. Later Extinct Floras, p. 50, 1868.

*Rhamnus concinnus* (Newby) Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A., p. 330, 1875.

Fort Union group: Fort Union, North Dakota.

Canadian upper Laramie: Porcupine Creek.

*Rhamnites minor* Hollick in Newby. Fl. Amboy Clays, p. 106, pl. xlii, f. 36, 1895 [1896].

Amboy clay: New Jersey?

*Rhamnus acuminatifolius* Web. Palæontogr., vol. ii, p. 206, 1853;

Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873].

[Not afterwards mentioned by Lesquereux.]

——?: Six miles above Spring Canyon, Montana; Golden, Colorado.

*Rhamnus*? *acuta* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 98, pl. xli, f. 6; pl. xlv, f. 13c, 1882; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxvii, f. 6, 1894.

Cretaceous: Lloyds Neck, Long Island.

**Rhamnus alaternoides** Heer. Fl. Tert. Helv., vol. iii, p. 78, pl. cxxiii, f. 21-23, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1873 [1874]; Tert. Fl., p. 278, pl. lii, f. 11, 11a, 1878.

Denver group: Golden Colorado.

**Rhamnus Cleburni** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]; Tert. Fl., p. 280, pl. liii, f. 1-3, 1878.

Denver group: Golden Colorado.

Laramie group?: Black Buttes, Wyoming?; Upper Kanab Valley, Utah?: Cross Lake, Louisiana?

**Rhamnus Cleburni** Lx., var. — Lx. Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Eocene?: Cherry Creek, Oregon.

**Rhamnus concinnus** Newby. Dn. = *Rhamnites concinnus*.

**Rhamnus crenatus** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 55, 1888.

Denver group: Golden, Colorado.

**Rhamnus Dechenii** Web. Palæontogr., vol. ii, p. 204, pl. xxiii, f. 2, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1872 [1873]; Proc. U. S. Nat. Mus., vol. xi, p. 20, 1888.

Laramie group: Black Buttes, Wyoming; Golden, Colorado.

Eocene?: Cherry Creek, Oregon.

**Rhamnus deformatus** Lx. Cret. and Tert. Fl., p. 126, pl. xx, f. 6, 1883.

Denver group: Golden, Colorado.

**Rhamnus deletus?** Heer. Fl. Tert. Helv., vol. iii, p. 79, pl. cxxiii, f. 19-23, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 15, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group?: Raton Mountains, New Mexico.

**Rhamnus elegans** Newby. Later Extinct Floras, p. 49, 1868.

Fort Union group?: Belmont, Colorado.

**Rhamnus? discolor** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 398, 1872 [1873]; Tert. Fl., p. 280, pl. lii, f. 17, 1878. [See *Apeibopsis discolor*.]

Laramie group: Sand Creek, Colorado?; Black Buttes, Wyoming.

**Rhamnus Eridani** Ung. Gen. et Sp. Pl. Foss., p. 465, 1850; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 25, 1888.

Eolignitic: Cross Lake, Louisiana.

**Rhamnus Fischeri** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 15, 1871 [1872]. [Not afterwards referred to by its author.]

Laramie group?: Fischers Peak, New Mexico.

**Rhamnus Gaudini** Heer. Fl. Tert. Helv., vol. iii, p. 79, pl. cxxiv, f. 4-15; cxxv, f. 1, 7, 13, 1859; Newby., Bost. Journ. Nat. Hist., vol. vii, p. 520, 1863.

——: Birch Bay, Washington.

**Rhamnus goldianus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]; Tert. Fl., p. 281, pl. liii, f. 4-8, 1878.

*Berchemia multinervis* Ward. Bull. U. S. Geol. Surv., no. 37, p. 73, pl. xxxiii, f. 2, 1887.

Denver group: Golden and Silver Cliff, Colorado, etc.

**Rhamnus goldianus lator** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873]. [Apparently not afterwards referred to by its author.]

——?: Golden, Colorado.

*Rhamnus inæqualis* Lx. = *Diospyros brachycephala*.

**Rhamnus inæquilateralis** Lx. Fl. Dak. Gr., p. 170, pl. xxxvii, f. 4-7, 1892.

Dakota group: Kansas.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Rhamnus intermedius** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 286, 1871 [1872]; Tert. Fl., p. 282, pl. liv, f. 3, 1878.

Green River group: Washakie Station, Wyoming.

Denver beds?: Golden, Colorado.

Laramie group: Raton Pass, New Mexico?

**Rhamnus marginatus** Lx. Geol. Rept. Ark., vol. ii, p. 319, pl. vi, f. 1, 1860; Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xxii, f. 3-5, 1869.

Eolignitic: Mississippi.

**Rhamnus Meriani?** Heer. Lesquereux, Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 405, 1873 [1874]. [Not afterwards recognized.]

Laramie group?: Black Buttes, Wyoming.

**Rhamnus Mudgei** Lx. Fl. Dak. Gr., p. 169, pl. xxxvii, f. 2, 3, 1892.

Dakota group: Kansas.

**Rhamnus notatus?** Sap. Ann. d. Sci. Nat., 5th ser. bot., vol. viii, p. 108, pl. xi, f. 8, 1867; Lx., Cret and Tert. Fl., p. 189, pl. xxxviii, f. 15, 1883.

Green River group: Florissant, Colorado.

**Rhamnus obovatus** Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 207, 1868; Tert. Fl., p. 281, pl. liv, f. 1, 2, 1878.

Laramie group?: Purgatory Canyon, New Mexico; Golden, Colorado?; Evanston, Wyoming?

Eocene?: Cherry Creek, Oregon.

**Rhamnus oleæfolius** Lx. Cret. and Tert. Fl., p. 189, pl. xxxviii, f. 14, 1883.

Green River group: Florissant, Colorado.

**Rhamnus parvifolius** Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Fort Union group: Valley of the Yellowstone, Montana.

**Rhamnus prunifolius** Lx. Cret. and Tert. Fl., p. 85, 1883; Fl. Dak. Gr., p. 169, pl. xxxv, f. 14, 1892.

Dakota group: Kansas.

**Rhamnus rectinervis** Heer. Fl. Tert. Helv., vol. iii, p. 80, pl. cxxv, f. 2-6, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]; Tert. Fl., p. 279, pl. lii, f. 12-15, 1878.

Laramie group: Golden, Colorado; Black Buttes, Wyoming.

Laramie group?: Evanston, Wyoming; Bozeman coal field, Montana?

**Rhamnus revoluta** Lx. Fl. Dak. Gr., p. 171, pl. lxxv, f. 5, 1892.

Dakota group: Kansas.

**Rhamnus Rossmassleri** Ung. Gen. et Sp. Pl. Foss., p. 464, 1850; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 35, pl. iii, f. 5, 1892.

Cretaceous: Tottenville, Staten Island, New York.

**Rhamnus Rossmässleri** Ung. Lx. = *Juglans rhamnoides*.

**Rhamnus similis** Lx. Fl. Dak. Gr., p. 168, pl. xxxv, f. 12, 13, 1892.

Dakota group: Kansas.

**Rhamnus salicifolius** Lx. Am. Journ. Sci., vol. xlv, 2d ser., p. 206, 1868; Tert. Fl., p. 282, pl. liii, f. 9, 10, 1878.

Laramie group: Marshalls and Coal Creek, Colorado; Black Buttes, Wyoming.

**Rhamnus tenax** Lx. Am. Journ. Sci., vol. xlvi, p. 101, 1868; Cret. Fl., p. 109, pl. xxi, f. 4, 1874; Fl. Dak. Gr., p. 170, pl. xxxviii, f. 6, 1892.

Dakota group: Southern Kansas.

**Rhamnus** sp., Dn. Rept. Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

Lignite tertiary: Great Valley.

**Rhizocaulon gracile** Lx. = *Phyllites improbatus*.

**RHUS** (Tournefort.) Linnæus. Gen., ed. i, p. 84, 1737.

**Rhus acuminata** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 8, 1871 [1872]; Cret. and Tert. Fl., p. 194, pl. xlii, f. 14-17, 1883.

Green River group: Florissant and Green River, Colorado.

**Rhus bella?** Heer. Fl. Foss. Arct., vol. ii, abt. iv, p. 482, pl. lvi, f. 3-5 1869; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 407, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

——?: Six miles above Spring Canyon, Montana.

**Rhus Bendirei** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 15, pl. ix, f. 2, 1888.

Miocene: John Day Valley, Oregon.

**Rhus Boweniana** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 29, pl. ix, f. 8, 9, 1878.

Miocene: Chalk Bluffs? California.

**Rhus cassioides** Lx. Cret. and Tert. Fl., p. 193, pl. xli, f. 11, 1883.

Green River group: Florissant, Colorado.

**Rhus coriarioides** Lx. Cret. and Tert. Fl., p. 193, pl. xli, f. 3, 1883.

Green River group: Florissant, Colorado.



**Rhus deleta** Heer. Fl. Tert. Helv., vol. iii, p. 83, pl. cxxvii, f. 8; pl. cliv, f. 26, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., 1871, suppl., p. 12, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Laramie group?: Evanston, Wyoming.

**Rhus dispersa** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 32, pl. i, f. 23, 1878.

Miocene: Table Mountain, California.

**Rhus?** drymeja Lx. = *Myrica drymeja*.

**Rhus Evansii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 293, 1871 [1872]; Tert. Fl., p. 291, pl. i, f. 4; pl. lviii, f. 5-9, 1878.

Laramie group?: Evanston, Wyoming.

**Rhus fraterna** Lx. Cret. and Tert. Fl., p. 192, pl. xli, f. 1, 2, 1883.

Green River group: Florissant, Colorado.

**Rhus frigida** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 227, pl. ix, f. 6, 1894.

Eocene?: Herendeen Bay, Alaska.

**Rhus Haydenii** Lx. = *Weinmannia Haydenii*.

**Rhus Heufleri** Heer. Fl. Tert. Helv., vol. iii, p. 85, pl. cxxvii, f. 3-6, 1859; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 26, 1888.

Miocene?: Corral Hollow, California.

**Rhus Hilliæ** Lx. Cret. and Tert. Fl., p. 194, pl. xli, f. 12-15, 1883.

Green River group: Florissant, Colorado.

**Rhus membranacea** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 369, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 306, 1874 [1876]; Tert. Fl., p. 292, pl. lxiv, f. 6, 7, 1878.

Montana formation?: Point of Rocks, Wyoming.

**Rhus metopioides** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 31, pl. viii, f. 12, 13, 1878.

Miocene: Table Mountain, California.

**Rhus mixta** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 30, pl. ix, f. 13, 1878.

Miocene: Chalk Bluffs, California.

**Rhus myricæfolia** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 31, pl. i, f. 5-8, 1878.

Miocene: Chalk Bluffs, California.

**Rhus nervosa** Newby. Later Extinct Floras, p. 53, 1868.

Fort Union group: Fort Union, North Dakota.

**Rhus payettensis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 733, pl. ci, f. 6, 7, 1898.

Payette formation: Marsh, Idaho.

**Rhus Powelliana** Lx. Fl. Dak. Gr., p. 155, pl. lvi, f. 4, 5, 1892.

Dakota group: Kansas.

**Rhus psuedo-Meriani** Lx. = *Quercus doljensis*.

**Rhus rosæfolia** Lx. Tert. Fl., p. 293, pl. xlii, f. 7-9, 1878.

Weinmannia rosæfolia Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874].

Green River group: Near Florissant, Colorado.

**Rhus subrhomboidalis** Lx. Cret. and Tert. Fl., p. 195, pl. xli, f. 16-19, 1883.

Green River group: Florissant, Colorado.

**Rhus trifolioides** Lx. Cret. and Tert. Fl., p. 196, 1883.

Green River group: Florissant, Colorado.

**Rhus typhinoides** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 29, pl. ix, f. 1-6, 1878.

Miocene: Table Mountain, California.

**Rhus Uddeni** Lx. Fl. Dak. Gr., p. 154, pl. lvii, f. 2, 1892.

Dakota group: Kansas.

Cheyenne sandstone: Belvidere, Kansas.

**Rhus vexans** Lx. Cret. and Tert. Fl., p. 195, pl. xli, f. 20, 1883.

Green River group: Florissant, Colorado.

**Rhus? Westii** Kn. in Lx. Fl. Dak. Gr., p. 154, pl. xxxviii, f. 9, 10, 1892.

Dakota group: Kansas.

**Rhus Winchellii** Lx. Cret. and Tert. Fl., p. 236, 1883.

Fort Union group: Yellowstone Valley.

**Rhus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 145, 1897.

Fort Union group: Black Buttes, Wyoming.

**Rhus?** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**ROGERSIA** Fontaine. Potomac Fl., p. 287, 1889.

**Rogersia angustifolia** Font. Potomac Fl., p. 288, pl. cxliii, f. 2; cxlix, f. 4, 8; cl, f. 2-7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Rogersia longifolia** Font. Potomac Fl., p. 287, pl. cxxxix, f. 6; cxliv, f. 2; cl, f. 1; cliv, f. 1, 2, 1889.

Potomac formation: Kankeys, near Dutch Gap Canal, and Fredericksburg, Virginia.

**ROSA** Tournefort. Ex Linnæus, Syst., ed. i, p. 1735.

**Rosa Hilliæ** Lx. Cret. and Tert. Fl., p. 199, pl. xl, f. 16, 17, 1883.

Green River group: Florissant, Colorado.

**ROSELLINITES** (De Not.) Meschinelli, Sylloge Fung. Foss., p. 14, 1892.

**Rosellinites lapideus** (Lx.) n. comb.

Sphærites lapideus (Lx.) Meschinelli. Sylloge Fung. Foss., p. 30, 1892.

Spheria lapidea Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 373, 1872 [1873]; Tert. Fl., p. 34, pl. i, f. 3, 1878.

Laramie group: Raton Mountains, Colorado.

**SABAL** Adanson. Fam. Pl., vol. ii, p. 495, 1763.

Sabal Campbells Newby. = Sabalites Campbelli.

Sabal communis Lx. = Flabellaria eocenica.

**Sabal goldiana** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 377, 1872 [1873]: [Not afterwards referred to by Lesquereux. Same as *Sabalites Campbellsii*?]

———?: Golden, Colorado.

**Sabal Grayana** Lx. = *Sabalites Grayanus*.

**Sabal imperialis** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vi, f. 23-23b, 1882 [1883]; op. cit., vol. xi, sec. iv, p. 57, pl. xiv, f. 61, 1893 [1894].

*Sabal* sp. Newby. Bost. Journ. Nat. Hist., vol. vii, p. 515, 1863.

Upper Cretaceous: Nanaimo; Port McNeill.

**Sabal major**? (Ung.) Heer. Fl. Tert. Helv., vol. i, p. 88, pl. xxxv; pl. xxxvi, f. 1, 2, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 295, 1871 [1872]. [Not afterwards recognized. Probably referred to *Sabalites Campbellsii*.]

*Flabellaria major* Ung. Chlor. Prot., p. 42, pl. xiv, f. 2, 1842.

Eocene?: Head of Snake River, Yellowstone National Park.

**Sabal Powellii** Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene: Green River, Wyoming.

*Sabal* sp., Newby. = *Sabal imperialis*.

**SABALITES** Saporta. Études ii; Ann. d. Sci. Nat., 5th ser., vol. iii, p. 77, 1865.

**Sabalites Campbellsii** (Newby.) Lx. Tert. Fl., p. 113, 1878.

*Sabal Campbellsii* Newby. Bost. Journ. Nat. Hist., vol. vii, p. 515, 1863; Later Extinct Floras, p. 41, 1868.

Denver group: Golden, Colorado.

Fort Union group: Yellowstone River, Montana.

Laramie group: Raton Mountains, and Gehrungs, Colorado; Jack Buttes, Wyoming.

———?: Vancouver, British Columbia, etc.

**Sabalites fructifer** Lx. ex. p. Tert. Fl., p. 114, pl. xi, f. 3, 3a, 1878.

*Flabellaria? fructifera* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874].

Denver group: Golden, Colorado.

**Sabalites fructifer** Lx. [Tert. Fl., pl. xi, fig. 3a and fruit on fig. 3] = *Nyssa? racemosa*.

**Sabalites Grayanus** Lx. Tert. Fl., p. 112, pl. xii, f. 1, 2, 1878.

*Sabal Grayana* Lx. Trans. Am. Phil. Soc., vol. xiii, p. 412, pl. xiv, f. 4-6, 1869.

Eolignitic: Mississippi and Arkansas.

Laramie group: Golden, Colorado; Point of Rocks, Wyoming.

———?: Pleasant Park, California.

**SAGENOPTERIS** Presl. In Sternberg Vers., vol. ii, p. 164, 1838.

**Sagenopteris elliptica** Font. Potomac Fl., p. 149, pl. xxvii, f. 9, 11-17, 1889.

Potomac formation: Near Potomac Run and Kankeys, Virginia; Baltimore, Md.

**Sagenopteris latifolia** Font. Potomac Fl., p. 148, pl. xxvii, f. 10, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Horsetown beds: Shasta County, California.

**Sagenopteris Mantelli** (Dunk.) Schenk. Deutsch. Weald. Fl., Palaeontogr., vol. xix p. 222, 1871; Font., in Diller and Stanton, Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

**Sagenopteris virginensis** Font. Potomac Fl., p. 150, pl. cxxxviii, f. 13; cxxxix, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sagenopteris** sp., Font in Diller and Stanton. Bull. Geol. Soc. Am., vol. v, p. 450, 1894.

Knoxville beds: Tehama County, California.

**SAGITTARIA** Ruppius. Ex Linnæus. Syst., ed. i, 1735.

**Sagittaria Victor-Masoni** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 354, pl. iii, f. 5, 1895.

Potomac formation: Mount Vernon, Virginia.

**Sagittaria pulchella** Heer. Fl. Foss. Alask., p. 25, pl. i, f. 15, 1869.

Eocene?: Alaska.

**Sagittaria** n. sp.? Lx. Proc. U. S. Nat. Mus., vol. x, p. 37, 1887.

Eocene?: Sitka, Alaska.

**SALICIPHYLLUM** Fontaine. Potomac Fl., p. 302, 1889.

**Saliciphyllum ellipticum** Font. Potomac Fl., p. 303, pl. cxlvi, f. 2, 4; cl, f. 8; clxiii, f. 5; clxvi, f. 2, 1889.

Potomac formation: near Dutch Gap Canal, Fredericksburg, and near Brooke, Virginia.

**Saliciphyllum longifolium** Font. Potomac Fl., p. 302, pl. cl, f. 12, 1889.

Potomac formation: near Potomac Run, Virginia.

**Saliciphyllum parvifolium** Font. Potomac Fl., p. 303, pl. clxxii, f. 5, 1889.

Potomac formation: Baltimore, Maryland.

**Salisburia adiantoides** Ung.=Ginkgo adiantoides.

**Salisburia biternata** Lx.=Ginkgo biternata.

**Salisburia (Ginkgo) lepida** Heer. Dn.=Ginkgo lepida.

**Salisburia nana** Dn.=Ginkgo nana.

**Salisburia pusilla** Dn.=Ginkgo pusilla.

**Salisburia (Ginkgo) sibirica** Heer Dn.=Ginkgo sibirica.

**Salisburia**, nuts of, Dn.=Ginkgo sp.

**Salisburia**, nutlets of, Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886].

Lower Laramie group: Canada.

**SALIX** (Tournefort.) Linnæus. Syst., ed. i, 1735.

**Salix amygdalæfolia** Lx. Cret. and Tert. Fl., p. 156, pl. xxxi, f. 1, 2, 1883.

Green River group: Florissant, Colorado.

Miocene: John Day Valley, Oregon.

**Salix angusta** Al. Br. In Buckl. Geol.; also in Stizenberger Verst., p. 77, 1851; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 168, pl. xxii, f. 4, 5, 1878.

Green River group: Green River Station, Wyoming.

Tertiary: Montana, Wyoming, Kentucky, California, etc.

**Salix californica** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 10, pl. i, f. 18-20, 1878.

Miocene: Table Mountain, California.

**Salix cuneata** Newby. Later Extinct Floras, p. 21, 1868.

Dakota group: Mouth of Big Sioux, Nebraska.

**Salix deleta** Lx. Fl. Dak. Gr., p. 49, pl. iii, f. 8, 1892.

Dakota group: Kansas.

**Salix densinervis** Lx. Am. Journ. Sci., vol. xxvii, p. 364, 1859; Geol. Tenn., p. 427, pl. K, f. 9, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Salix elliptica** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 10, pl. i, f. 22, 1878.

Miocene: Chalk Bluffs, California.

**Salix elongata** O. Web. Palæontogr., vol. ii, p. 177, pl. xix, f. 10, 1853; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Tert. Fl., p. 169, pl. xxii, f. 6, 7, 1878.

Green River group: Elko Station, Nevada.

**Salix Engelhardtii** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 17, pl. viii, f. 2, 1888.

Miocene: John Day Valley, Oregon.

**Salix evanstoniana** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 10, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Evanston, Wyoming.

**Salix flexuosa** Newby. = *Salix proteæfolia flexuosa*.

**Salix groenlandica** Heer. Fl. Foss. Arct., vol. i, p. 101, pl. iv, f. 8-10, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 296, 1871 [1872]. [Not afterwards recognized by Lesquereux.]

Laramie group? Six miles above Spring Canyon, Montana.

**Salix Hayei** Lx. Fl. Dak. Gr., p. 48, pl. iii, f. 7, 1891.

Dakota group: Kansas.

**Salix inæqualis** Newby. Fl. Amboy Clays, p. 67, pl. xvi, f. 1, 4, 6; xvii, f. 2-7, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Salix integra** Göpp. Zeitschr. Deutsch. Geol. Gesell., vol. iv, p. 493, 1852; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 397, 1873 [1874]; Tert. F., p. 167, pl. xxii, f. 1, 2, 1878.

—: Black Buttes, Wyoming; Golden, Colorado; Corral Hollow, California.

**Salix islandicus** Lx. Am. Journ. Sci., vol. xxvii, p. 360, 1859.

—: Bellingham Bay.

**Salix kamloopsiana** Dn. Trans. Roy. Soc., Canada, vol. viii, sec. iv, p. 90, f. (in text) 32, 1890.

Eocene?: Kamloops, British Columbia.

**Salix laramiana** Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 28, pl. i, f. 10, 1886 [1887].

Upper Laramie group: Great Valley.

**Salix Lavateri** Heer. Fl. Tert. Helv., vol. ii, p. 28, pl. lxvi, f. 1-12, 1856; Fl. Foss. Alask., p. 27, pl. ii, f. 10, 1869.

Eocene?: Port Graham Alaska.

——?: Sams Creek, Oregon.

**Salix Libbeyi** Lx. Cret. and Tert. Fl., p. 156, pl. xxxi, f. 3, 1883.

Green River group: Florissant, Colorado.

**Salix macrophylla** Heer. Fl. Tert. Helv., vol. ii, p. 29, pl. lvii, 1856; Fl. Foss. Alask., p. 27, pl. ii, f. 9, 1869.

Eocene?: Port Graham, Alaska.

**Salix media** Heer. Fl. Tert. Helv., vol. ii, p. 32, pl. i, f. 9 f; lxviii, f. 14-19, 1856; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 6, 1871 [1872]; Tert. Fl., p. 168, pl. xxii, f. 3, 1878.

Green River group: Green River, Wyoming; Elko Station, Nevada.

Eolignitic: Wickliffe, Kentucky.

**Salix Meekii** Newby. Later Extinct Floras, p. 19, 1868.

Dakota group: Blackbird Hill, Nebraska.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Salix membranacea** Newby. Later Extinct Floras, p. 19, 1868; Fl. Amboy Clays, p. 66, pl. xxix, f. 12, 1895 [1896].

Amboy clay: Sayreville, New Jersey.

**Salix minuta** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 218, pl. ix, f. 1, 1894.

Eocene?: Herendeen Bay, Alaska.

**Salix nervillosa** Heer. Phyll. Crét. d. Nebr., p. 15, pl. i, f. 3, 1866; Lx., Fl. Dak. Gr., p. 49, 1892.

Dakota group: Tehama, Nebraska.

**Salix Newberryana** Hollick in Newby. Fl. Amboy Clays, p. 68, pl. xiv, f. 2-7, 1895 [1896].

Amboy clay: New Jersey.

**Salix pacifica** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 26, pl. vii, f. 24, 1882 [1883].

Upper Cretaceous: Baynes Sound.

**Salix proteaefolia** Lx. Am. Journ. Sci., vol. xlvi, p. 94, 1868; Rept. on Clay in N. J., p. 29, 1878.

Dakota group: Decatur, Nebraska.

Amboy clay: Woodbridge and Sayreville, New Jersey.

Cretaceous: Marthas Vineyard.

**Salix proteæfolia flexuosa** (Newby.) Lx. Fl. Dak. Gr., p. 50, pl. xlv, f. 4, 5, 1892.

*Salix flexuosa* Newby. Later Extinct Floras, p. 21, 1868; Ill. Cret. and Tert. Pl., pl. i, f. 4, 1878.

Dakota group: Kansas.

Cretaceous: Seacliff, Long Island.

**Salix proteæfolia lanceolata** Lx. Fl. Dak. Gr., p. 50, pl. lxiv, f. 6-8, 1892.

Dakota group: Ellsworth County, Kansas.

**Salix proteæfolia linearifolia** Lx. Lx. Fl. Dak. Gr., p. 49, pl. lxiv, f. 1-3, 1892.

Dakota group: Kansas.

**Salix proteæfolia longifolia** Lx. Fl. Dak. Gr., p. 50, pl. lxiv, f. 9, 1892.

Dakota group: Ellsworth County, Kansas.

**Salix purpuroides** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 50, pl. clxxiv, f. 9, 1894.

Cretaceous: Seacliff, Long Island.

**Salix Ræana** Heer. Fl. Foss. Arct., vol. i, p. 102, pl. iv, f. 11-13; pl. xlvii, f. 11, p. 139; pl. xxi, f. 13, 1868.

Eocene?: Cook Inlet, Alaska.

Miocene?: Mackenzie River; John Day Valley, Oregon.

Lignitic tertiary: Great Valley.

**Salix Schimperi** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 21, pl. xiii, f. 5, 1888.

Eocene?: Cherry Creek, Oregon.

**Salix tabellaris** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 414, pl. xvii, f. 4, 1869.

Eolignitic: Mississippi.

**Salix varians** Göpp. Zeitschr. d. Deutsch. Geol. Gesell, vol. iv, p. 493, 1852; Tert. Fl. v. Schosnitz, p. 26, pl. xix, f. 17, 18; xx, f. 1, 2, 1855; Heer, Fl. Foss. Alask., p. 27, pl. ii, f. 8; iii, f. 1-3, 1869.

Eocene?: English Bay; Neniltochik, Alaska.

**Salix Worthenii** Lx. Trans. Am. Phil. Soc., vol. xiii, p. 414, pl. xv, f. 7, 1869.

Eolignitic: Lagrange, Tennessee; Mound City, Illinois.

**Salix** sp., Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 32, pl. ii, f. 15, 16, 1892.

Cretaceous: Staten Island.

**Salix** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 57, pl. vii, f. 22, 1893 [1894].

Upper Cretaceous: Port McNeill, Vancouver.

**Salix** sp., Newby. Fl. Amboy Clays, p. 68, pl. xlii, f. 6-8, 1895 [1896].  
Amboy clay: No location.

**Salix** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Montana formation: Near Harpers, Wyoming.

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**Salix** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

**Salix** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 148, 1897.

Laramie group: Rock Springs, Wyoming.

**Salix**, fruiting catkin of, Lx. Fl. Dak. Gr., p. 51, pl. viii, f. 6, 1892.

Dakota group: Near Delphos, Kansas.

**SALVINIA** Adanson. Fam. Pl., vol. ii, p. 15, 1763.

*Salvinia Alleni* Lx. = *Tmesipteris Alleni*.

*Salvinia attenuata* Lx. = *Marsilea attenuata*.

*Salvinia cyclophylla* Lx. = *Phyllites cyclophylla*.

**Salvinia elliptica** Newby. Mss. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 255, pl. ccv, f. 14, 14a, 15, 1894.

Upper Cretaceous?: Carbonado, Washington.

**Salvinia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 133, 1897.

Laramie group: Lance Creek, Converse County, Wyoming.

**SANTALUM** Linnæus. Gen., ed. 2, p. 165, 1742.

**Santalum Americanum** Lx. Cret. and Tert. Fl., p. 164, pl. xxxii, f. 7, 1883.

Green River group: Florissant, Colorado.

**SAPINDOPSIS** Fontaine. Potomac Fl., p. 296, 1889.

**Sapindopsis brevifolia** Font. Potomac Fl., p. 300, pl. cliii, f. 4; clv, f. 1, 7; clxiii, f. 3, 1889.

Potomac formation: Near Brooke, Virginia.

**Sapindopsis cordata** Font. Potomac Fl., p. 296, pl. cxlvii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sapindopsis elliptica** Font. Potomac Fl., p. 297, pl. cxlvii, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sapindopsis magnifolia** Font. Potomac Fl., p. 297, pl. cli, f. 2, 3; clii, f. 2, 3; cliii, f. 2; cliv, f. 1, 5; clv, f. 6, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

**Sapindopsis obtusifolia** Font. Potomac Fl., p. 301, pl. clvi, f. 13; clix, f. 3-6, 1889.

Potomac formation: Deep Bottom and near Brooke, Virginia.

**Sapindopsis parvifolia** Font. Potomac Fl., p. 300, pl. cliv, f. 6, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

**Sapindopsis tenuinervis** Font. Potomac Fl., p. 301, pl. cliii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

**Sapindopsis variabilis** Font. Potomac Fl., p. 298, pl. cli, f. 1; clii, f. 1, 4; cliii, f. 3; cliv, f. 2-4; clv, f. 2-5, 1889.

Potomac formation: Near Brooke and White House Bluff, Virginia.

**SAPINDUS** Tournefort ex. Linnæus. Gen. Pl., ed. i, p. 359, 1737.

**Sapindus affinis** Newby. Later Extinct Floras, p. 51, 1868.

Fort Union group: Gladstone, Dakota; Great Valley, Montana;  
Woody Mountains, British Columbia.



**Sapindus alatus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 68, pl. xxxi, f. 3, 4, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Sapindus americanus** Lx. Am. Journ. Sci., vol. xxxii, p. 359, 1861; Geol. Vt., vol. ii, p. 715, f. 142, 143, 144, 145, 1861.

——: Brandon, Vermont.

**Sapindus angustifolius** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]; Tert. Fl., p. 265, pl. xlix, f. 2-7, 1878.

Eocene: Kentucky.

Green River group: Florissant, Colorado.

Eolignitic: Wickliffe, Kentucky.

Miocene: John Day Valley and? Lanes Creek, Oregon.

**Sapindus apiculatus** Vel. Fl. Boehm. Kriedefl., Theil iii, p. 6 [53], pl. vii [xxii], f. 1-8, 1884; Hollick, Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiii, f. 1, 2, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Sapindus caudatus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 380, 1872 [1873]; Tert. Fl., p. 264, pl. xlviii, f. 6, 1878.

Denver group: Golden, Colorado.

Eolignitic?: Cross Lake, Louisiana?

**Sapindus coriaceus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 415, 1873 [1874]; Tert. Fl., p. 265, pl. xlix, f. 12-14, 1878.

Green River group: Elko Station, Nevada.

Eolignitic?: ? Cross Lake, Louisiana.

**Sapindus Dentoni** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 388, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 315, 1874 [1876]; Tert. Fl. p. 265, pl. lxiv, f. 2-4, 1878.

Green River group?: Mouth White River.

**Sapindus diversifolius** Lx. Fl. Dak. Gr., p. 158, pl. lxiv, f. 18, 1892.

Dakota group: Kansas.

**Sapindus dubius** Ung. Denkschr. Wien. Akad., vol. vii (Foss. Fl. v. Gleichengb.), p. 180 [24], pl. v, f. 11, 1854; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 12, 1888.

Eolignitic: Wickliffe, Kentucky.

**Sapindus falsifolius** Al. Br. in Stizenberger. Verstein., p. 87, 1851; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 12, pl. iv, f. 4, 1888.

Juglans falsifolia Al. Br. in Buckl. Geol.

Eolignitic: Boaz Station, Graves County, Kentucky.

**Sapindus grandifoliolus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 67, pl. xxx, f. 3-5; pl. xxxi, f. 1, 2, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Sapindus inflexus** Lx. Cret. and Tert. Fl., p. 182, pl. xxxii, f. 2, 1883.

Green River group: Florissant, Colorado.

**Sapindus lancifolius** Lx. Cret. and Tert. Fl., p. 182, pl. xxxii, f. 3-6; pl. xxxvii, f. 9, 1883.

Green River group: Florissant, Colorado.

**Sapindus membranaceus** Newby. Later Extinct Floras, p. 52, 1868.  
Fort Union group: Fort Union, North Dakota.

**Sapindus Morrisoni** Lx. Cret. and Tert. Fl., p. 83, pl. xvi, f. 1, 2, 1883; Fl. Dak. Gr., p. 158, pl. xxxv, f. 1, 2, 1892.

Dakota group: Morrison, Colorado; Kansas; New Ulm, Minnesota.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

**Sapindus obtusifolius** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 419, 1873 [1874]; Tert. Fl., p. 266, pl. xlix, f. 8-11, 1878.

Green River group?: Eight miles southeast of Green River Station, Wyoming.

Fort Union group: Bad Lands, Dakota.

**Sapindus stellarifolius** Lx. Tert. Fl., p. 264, pl. xlix, f. 1, 1878.

Green River group: Florissant, Colorado.

**Sapindus undulatus** Al. Br. in Stizenberger. Verstein, p. 87, 1851; Lx., Trans. Am. Phil. Soc., vol. xiii, p. 420, pl. xxii, f. 6, 1869.

Eolignitic: Mississippi.

**Sapindus** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Upper Laramie group: North Saskatchewan.

**Sapindus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek coal," Wyoming.

**SAPOTACITES** Eittingshausen. Abhandl. d. k. k. Geol. Reichsanstalt. [Tert. Fl. Häring], vol. ii, abt. iii, p. 61, 1853.

**Sapotacites americanus** Lx. Geol. Tenn., p. 428, pl. K., f. 8, 1869.

Pleistocene?: Somerville, Fayette County, Tennessee.

**Sapotacites Haydenii** Heer. Proc. Phil. Acad. Sci., vol. x, p. 265, 1858; Newby., Later Extinct Floras, p. 8, 1868.

Dakota group: Kansas.

**Sapotacites retusus** Heer. Fl. Foss. Arct., vol. vii, p. 32, pl. lxi, f. 10, 1883; Newby., Fl. Amboy Clays, p. 123, pl. liii, f. 5, 6, 1895 [1896].

Amboy clay, Woodbridge, New Jersey.

**Sapotacites** sp.? Lx. Fl. Dak. Gr., p. 114, pl. lxxv, f. 3, 1892.

Dakota group: Kansas.

**SASSAFRAS** Linnæus. Syst., ed. i, 1735.

**Sassafras acutilobum** Lx. Cret. Fl., p. 79, pl. xiv, f. 1-2, 1874; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 236, pl. vii, f. 1, 1893.

Dakota group: Salina River, Kansas.

Cretaceous: Glen Cove, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**Sassafras bilobatum** Font. Potomac Fl., p. 290, pl. clvi, f. 12; clxiv, f. 4, 1889.

Potomac formation: Near Brooke, Virginia.

**Sassafras** (**Araliopsis**) **Burpeana** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886]; op. cit., vol. iv., p. 28, pl. ii, f. 11, 1886 [1887].  
Canadian upper Laramie: Calgary, Canada.

**Sassafras** (**Araliopsis**) **cretaceum** Newby. Later Extinct Floras, p. 14, 1868; Lx., Ill. Cret. and Tert. Pl., pl. vi, f. 1-4, 1878; Cret. Fl., p. 80, pl. xi, f. 1, 2; xii, f. 2, 1878.

Dakota group: Nebraska and Kansas.

**Sassafras** (**Araliopsis**) **cretaceum dentatum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 344, 1874 [1876]; Cret. Fl., pl. xi, f. 1, 2.

Dakota group: Kansas?

**Sassafras** (**Araliopsis**) **cretaceum grossedentatum** Lx. Fl. Dak. Gr., p. 101, pl. li, f. 5, 1892.

Dakota group: Kansas.

**Sassafras** **cretaceum heterolobum** Font. Potomac Fl., p. 289, pl. clii, f. 5; clix, f. 8; clxiv, f. 5, 1889.

Potomac formation: Near Brooke, Virginia.

**Sassafras** (**Araliopsis**) **cretaceum obtusum** Lx. Cret. Fl., p. 80, pl. xii, f. 3; xiii, f. 1, 1874; Fl. Dak. Gr., p. 102, 1892.

*Sassafras* (*Araliopsis*) *obtusum* Lx., Cret. and Tert. Fl., p. 56, 1883.

Cheyenne sandstone: Belvidere, Kansas.

Dakota group: Kansas.

**Sassafras** (**Araliopsis**) **dissectum** Lx. Cret. and Tert. Fl., p. 57, 1883; Fl. Dak. Gr., p. 101, pl. xiv, f. 1, 1892.

Dakota group: Fort Harker, Kansas.

**Sassafras** (**Araliopsis**) **dissectum symmetricum** Hollick. Bull. Torr. Bot. Club, vol. xxii, no. 5, p. 226, pl. ccxxvii, 1895.

Dakota group: Fort Harker, Kansas.

*Sassafras harkeriana* Lx. = *Cissites harkerianus*.

**Sassafras** **hastatum** Newby. Fl. Amboy Clays, p. 88, pl. xxvii, f. 4-6; xxviii, f. 1, 2; xl, f. 4, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

*Sassafras Leconteanum* Lx. = *Persea Lecontiana*.

**Sassafras** (**Araliopsis**) **mirabile** Lx. Cret. Fl., p. 80, pl. xii, f. 1, 1874; Cret. and Tert. Fl., p. 56, 1883.

*Sassafras mirabilis* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

*Platanus latiloba* Newby. Later Extinct Floras, p. 23, 1868.

Dakota group: Kansas.

**Sassafras** **Mudgii** Lx. Am. Journ. Sci., vol. xlvi, p. 99, 1868; Cret. Fl., p. 78, pl. xiv, f. 3, 4; xxx, f. 7, 1874.

Dakota group: Salina River, Kansas.

Cheyenne sandstone: Belvidere, Kansas.

*Sassafras obtusu(s)m* Lx. = *Cissites salisburiae-folius*.

*Sassafras* (*Araliopsis*) *obtusum* Lx. Cret. and Tert. Fl., p. 56] = *Sassafras* *cretaceum obtusum*.

**Sassafras** (**Araliopsis**) **papillosum** Lx. Fl. Dak. Gr., p. 102, pl. vi, f. 7, 1892.

Dakota group: Kansas.

**Sassafras parvifolium** Font. Potomac Fl., p. 289, pl. cxxxix, f. 7, 1889.

Potomac formation: Baltimore, Maryland.

**Sassafras (Araliopis) platanoides** Lx. Cret. and Tert. Fl., p. 58, pl. vii, f. 1, 1883.

Dakota group: Kansas.

**Sassafras? primordiale** Lx. Fl. Dak. Gr., p. 100, pl. xvi, f. 10, 1892.

Dakota group: Kansas.

**Sassafras progenitor** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 53, pl. clxxiv, f. 1, 1894; Newby., Fl. Amboy Clays, p. 88, pl. xxvii, f. 1-3, 1895 [1896].

Cretaceous: Oak Neck, Long Island; Marthas Vineyard.

Amboy clay: Woodbridge, New Jersey.

**Sassafras (Araliopsis) recurvatum** Lx. Cret. and Tert. Fl., p. 57, 1883.

*Platanus recurvata* Lx. Cret. Fl., p. 71, pl. x, f. 3-5, 1874.

*Sassafras recurvatus* Lx. Ann. Rept., U. S. Geol. and Geogr. Surv. Terr., p. 424, 1872 [1873].

Dakota group: Near Fort Harker, Kansas.

**Sassafras Selwynii** Dn. Geol. Surv. Canada, Rept. Prog. for 1879-80, p. 53A, 1881; Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 28, pl. ii, f. 13, 1886 [1887].

Canadian upper Laramie: Souris River.

**Sassafras subintegrifolium** Lx. Am. Journ. Sci., vol. xlvi, p. 99, 1868; Fl. Dak. Gr., p. 99, pl. xiv, f. 2, 1892.

Dakota group: Kansas.

**Sassafras** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Six miles above Spring Canyon, Montana.

**Sassafras (Araliopsis)** sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Burts Creek, New Jersey.

**Sassafras** sp., Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 30, 30a, 1882 [1883].

Upper Cretaceous: Baynes Sound; Vancouver Island.

**Sassafras** sp., Kn. in Hill. Am. Journ. Sci., vol. 1, p. 212, 1895.

Cheyenne sandstone: Belvidere, Kansas.

**SCIRPUS** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Scirpus** sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Lignitic Tertiary: Porcupine Creek.

**Scirpus** sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 329, 1875.

Lignitic Tertiary: Porcupine Creek.

**SCLEROPTERIS** Saporta. Paléontol. Française: Pl. Jurass., vol. i, p. 364, 1873.

**Scleropteris dentata** Font. Potomac Fl., p. 153, pl. lxiii, f. 3, 4, 1889.

Potomac formation: Fredericksburg, Virginia.

**Scleropteris elliptica** Font. Potomac Fl., p. 151, pl. xxviii, f. 2, 4, 6; xxix, f. 1, 1889.

Potomac formation: Fredericksburg, near Potomac Run, near Dutch Gap Canal, Kankeys, and near Telegraph Station, Virginia.

**Scleropteris elliptica longifolia** Font. Potomac Fl., p. 152, pl. xxviii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Scleropteris vernonensis** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 349, pl. ii, f. 1-3, 1895.

Potomac formation: Mount Vernon, Virginia.

**Scleropteris virginica** Font. Potomac Fl., p. 152, pl. xxviii, f. 3, 5, 1889.

Potomac formation: Dutch Gap Canal, Virginia.

**SELAGINELLA** Beauvois. Prodr. Ætheog., p. 101, 1805.

**Selaginella Berthoudi** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 395, 1873 [1874]; Tert. Fl., p. 46, pl. v, f. 12, 12a, 1878.

Denver group: Golden, Colorado.

**Selaginella falcata** (Lx.) Emend. Kn.

*Selaginella? falcata* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1874 [1876; Tert. Fl., p. 46, pl. lxi, f. 12-15 [non pl. lxiv, f. 13, 13a], 1878.

Montana formation: Point of Rocks, Wyoming.

*Selaginella falcata* Lx. Ex. p. [Tert. Fl., pl. lxiv, f. 13, 13a] = *Lycopodium Lesquereuxii*.

**Selaginella laciniata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 378, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 297, 1874 [1876]; Tert. Fl., p. 47, pl. lxiv, f. 12, 12a, 1878.

Montana formation: Point of Rocks, Wyoming.

**SCLEROTITES** Meschinelli. Syllog. Fung. Foss., p. 67 [803], 1892.

**Sclerotites rubellus** (Lx.) Meschinelli. Syllog. Fung. Foss., p. 69 [805], 1892.

*Sclerotium rubellum* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 375, 1872 [1873]; Tert. Fl., p. 35, pl. i, f. 2, 2f, 1878.

Denver group: Golden, Colorado.

**Sclerotites** sp. (Lx.) n. comb.

*Sclerotium* sp., Lx. Fl. Dak. Gr., p. 23, pl. lix, f. 4, 4a, 1891.

Dakota group.

*Sclerotium rubellum* Lx. = *Sclerotites rubellus*.

*Sclerotium* sp. Lx. = *Sclerotites*.

**SEQUOIA** Endlicher. Synop. Conif., p. 197, 1847.

**Sequoia acuminata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Tert. Fl., p. 80, pl. vii, f. 15-16a, 1878.

Laramie group: Black Buttes, Wyoming.

**Sequoia acutifolia** Newby. Am. Journ. Sci., vol. xli, p. 200, pl. xiv, f. 7, 7a, 1891.

Kootanie: Great Falls, Montana.

**Sequoia affinis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 310, 1874 [1876]; Tert. Fl., p. 75, pl. vii, f. 3-5; pl. lxxv, f. 1-4, 1878.  
Sequoia Langsdorffii Brongn. Lx., Ann. Rept., p. 400, 1874 [1876]; Tert. Fl., p. 76, 1878.

Green River group: Florissant, Colorado; Elko Station, Nevada.

**Sequoia ambigua** Heer. Fl. Foss. Arct., vol. iv, abt. ii, p. 78, pl. xxi, 1874; Font., Potomac Fl., p. 245, pl. cxviii, f. 2; cxx, f. 1-6; cxxvii, f. 5; cxxxii, f. 3, 1889.

Cretaceous: Marthas Vineyard.

Kootanie: Great Falls, Montana.

Potomac formation: Near Dutch Gap Canal and near Telegraph Station, Virginia.

**Sequoia angustifolia** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Tert. Fl., p. 77, pl. vii, f. 6-10, 1878; Cret. and Tert. Fl., p. 240, pl. l, f. 5, 1883.

Green River group: Elko Station, Nevada.

Miocene: Corral Hollow, California.

**Sequoia biformis** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., p. 366, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 80, pl. lxii, f. 15-18a, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 16, pl. i, f. 1-6, 1887.

Montana formation: Point of Rocks, Wyoming.

**Sequoia brevifolia** Heer. Fl. Foss. Arct., vol. i, p. 93, pl. ii, f. 23, 1868; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 78, pl. lxi, f. 25-27, 1878.

Montana formation: Point of Rocks, Wyoming.

**Sequoia condita** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 391, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 335, pl. iv, f. 5-7, 1874 [1876]; Cret. and Tert. Fl., p. 32, pl. i, f. 5-7, 1883; Rept. on Clays in N. J., p. 29, 1878.

Dakota group: Kansas.

Amboy clay: Sayreville, New Jersey?

**Sequoia Couttsiae** Heer. Phil. Trans., vol. clii, pt. ii, p. 1051, pls. lix, lx, lxi, 1862; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 30, pl. i, f. 5, 1892.

Cretaceous: Staten Island.

Canadian upper Laramie: North Saskatchewan.

**Sequoia cycadopsis** Font. Potomac Fl., p. 243, pl. cxii, f. 9-11; cxiii, f. 1-3, 1889.

Potomac formation: Near Brooke, Virginia.

**Sequoia delicatula** Font. Potomac Fl., p. 247, pl. cxxi, f. 3, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Sequoia densifolia** Font. Potomac Fl., p. 246, pl. cxxi, f. 4, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

*Sequoia fastigiata* (Sternbg.) Heer. Neue Denkschr. Schw. Ges., vol. xxiii, Mém. 2, p. 11, pl. i, f. 10-13, 1869; Lx., Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 391, 1875 [1876]; Cret. and Tert. Fl., p. 31, 1883; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 335, pl. iii, f. 2, 8, 1874 [1876].

*Caulerpites fastigiatus* Sternbg. Vers., vol. ii, p. 23, 1833.

Dakota group: Kansas.

*Sequoia formosa* Lx. Am. Journ. Sci., vol. xlvi, p. 92, 1868.

Dakota group: Decatur, Nebraska.

*Sequoia gracillima* (Lx.) Newby. Fl. Amboy Clays, p. 50, pl. ix, f. 1-3, 1895 [1896].

*Glyptostrobus gracillimus* Lx. Am. Journ. Sci., 2d ser., vol. xlvi, p. 92, 1868;

Cret. Fl., p. 52, pl. i, f. 8, 11-11f, 1874; Cret. and Tert. Fl., p. 32, pl. i, f. 6-6b, 1883.

———?: Forks of Pine River, Northwest Territory.

Amboy clay: Keyport, New Jersey.

Cheyenne sandstone: Belvidere, Kansas.

Dakota group: Sioux City, Iowa.

*Sequoia gracilis* Heer. Fl. Foss. Arct., vol. iii, abt. ii, abt. 80, 1873; Font., Potomac Fl., p. 247, pl. cxxvi, f. 3, 4, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

*Sequoia Heerii* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 290, 1871 [1872]; Tert. Fl., p. 77, pl. vii, f. 11-13, 1878.

Green River group?: Sage Creek, ? Montana.

*Sequoia heterophylla* Vel. Gymnosp. d. Böhm. Kreidf., p. 22, pl. xii, f. 2-4, 6-9; xiii, f. 12, 1885; Newby, Fl. Amboy Clays, p. 49, pl. vi, f. 1-13, 1895 [1896].

Amboy clay: New Jersey; Kreischerville, Staten Island.

*Sequoia Langsdorffii* (Brgt.) Heer. Fl. Tert. Helv., vol. i, p. 54, pl. xx, f. 2; xxi, f. 4, 1855; Lx., Tert. Fl., p. 76, 1878.

*Taxites Langsdorffii* Brongn. Prod. Hist. Vég. Foss., p. 108, 1828.

Miocene: John Day Valley, Oregon; Mackenzie River.

Green River group: Florissant, Colorado.

Eocene: Alaska.

Fort Union group: Montana; Porcupine Creek, Canada.

Upper Cretaceous: Nanaimo.

*Sequoia Langsdorffii* var. Heer. Fl. Foss. Alask., p. 23, pl. i, f. 10b, 1869.

Eocene?: Near Sitka, Alaska.

*Sequoia longifolia* Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 365, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 298, 1874 [1876]; Tert. Fl., p. 79, pl. vii, f. 14, 14a; pl. lxi, f. 28, 29.

Montana formation: Point of Rocks, Wyoming; Coalville, Utah.

Laramie group: Greely, Coal Creek, and Marshalls, Colorado.

*Sequoia Langsdorffii* Brongn. Lx. [Ann. Rept. 1874, p. 410] = *Sequoia affinis*.

**Sequoia Nordenskiöldii** Heer. Fl. Foss. Arct., vol. ii, abt. iii, p. 36, pl. ii, f. 13*b*; iv, f. 1*a*, *b*, 4-38, 1870; Lx., Proc. U. S. Nat. Mus., vol. xi, p. 19, 1888.

Miocene: John Day Valley, Oregon; Mackenzie River.

Canadian upper Laramie: Porcupine Creek, Great Valley.

**Sequoia pagiophylloides** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 276, pl. xlii, f. 1-3*a*, 1893.

Trinity division: Glenrose, Texas.

**Sequoia Reichenbachii** (Gein.) Heer. Fl. Foss. Arct., vol. i, p. 83; pl. xliii, f. 1*d*, 2*b*, 5*a*, 1868; Lx., Cret. Fl., p. 51, pl. i, f. 10-10*b*, 1874; Fl. Dak. Gr., p. 35, pl. ii, f. 4, 1892; Hollick, Trans. N. Y. Acad. Sci., vol. xii, p. 30, pl. i, f. 18, 1892; Font., Potomac Fl., p. 243, pl. cxviii, f. 1, 4; cxix, f. 1-5; cxx, f. 7, 8; cxxii, f. 2; clxvii, f. 5, 1889; Dn., Trans. Roy. Soc. Canada, 1882, p. 21, 1882; Newby., Fl. Amboy Clays, p. 49, pl. ix, f. 19, 1895 [1896].

Avancarites Reichenbachii Gein. Charakteristik, heft iii, p. 98, pl. xxiv, f. 4, 1842.

Abietites dubius Lx. Tert. Fl., p. 81, pl. vi, f. 20, 21, 21*a*, 1878.

Livingston beds: Bozeman coal field, Montana.

Montana formation: Point of Rocks, Wyoming.

Amboy clay: Woodbridge, New Jersey.

Clay marl: Cliffwood, New Jersey.

Belly River series: Belly River, Canada.

Potomac formation: Dutch Gap Canal and Fredericksburg, Virginia.

Dakota group: Fort Harker, Kansas.

Kootanie: Great Falls, Montana.

**Sequoia Reichenbachii longifolia** Font. Potomac Fl., p. 244, pl. cxvii, f. 8, 1889.

Potomac formation: Near Dutch Gap Canal and Fredericksburg, Virginia.

**Sequoia rigida** Heer. Fl. Foss. Arct., vol. iii, p. 80, pl. xxii, f. 5*g*, 11*a*, 1873; Font., Potomac Fl., p. 246, pl. cxviii, f. 3; cxxi, f. 2; cxxvi, f. 2; cxxx, f. 3, 1889.

Potomac formation: Near Telegraph Station and near Potomac Run, Virginia.

Kootanie: Great Falls, Montana.

**Sequoia Smittiana** Heer. Zeitschr. d. deutsch. geol. Gesell. 1872, p. 161, 1872; Dn., Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 9, pl. ii, f. 7, 7*a*, 1885 [1886].

Amboy clay?: Sayreville, New Jersey?

Kootanie: Coal Creek, Crows Nest Pass and Middle Fork North Branch Old Man River, British Columbia; Great Falls, Montana.

**Sequoia spinosa** Newby. Proc. U. S. Nat. Mus., vol. v, p. 504, 1882 [1883].

Eocene? Cook Inlet, Alaska.



**Sequoia subulata** Heer. Zeitschr. d. deutsch. geol., Gesell. 1872, p. 162, 1872; Font., Potomac Fl., p. 245, pl. cxvii, f. 7, cxviii, f. 5, 6, 1889.

Potomac formation: Near Dutch Gap Canal, near Telegraph Station, and Fredericksburg, Virginia.

Amboy clay?: Sayreville, New Jersey?

**Sequoia Winchelli** Lx. Geol. and Nat. Hist. Surv. Minn., vol. iii, p. 10, pl. A, f. 1, 1893.

Dakota group: Austin, Minnesota.

**Sequoia** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Upper Laramie group: Turtle Mountain.

Lignitic: Souris Valley.

Middle lignitic: Two hundred and forty-five-Mile Valley; Wood

End Depot; Mackenzie River; Edmonton, British Columbia.

**Sequoia** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887. [Wood.]

Canadian upper Laramie: Wood End Depot; Coteau; Mackenzie River.

**Sequoia** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 32, 1887. [Wood.]

Belly River series: Ribstone Creek; Saskatchewan River, British Columbia.

**Sequoia** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 32, 1887. [Wood.]

Fort Pierre group: Bow River, Canada.

Belly River series: Ribstone Creek; west of Medicine Hat.

**Sequoia** sp., Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 80, f. (in text) 8, 1890 [1891].

——: Stump Lake, British Columbia.

**Sequoia** sp., Font. Potomac Fl., p. 247, pl. cxx, f. 9, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sequoia** sp., Font. Potomac Fl., p. 248, pl. cxvi, f. 7; cxxxii, f. 2, 5, 6, 1889.

Potomac formation: Near Brooke and Fredericksburg, Virginia.

**Sequoia** sp., Font. Potomac Fl., p. 248, pl. cxxxii, f. 10, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sequoia** sp., Kn. in Hill. Am. Journ. Sci., vol. I, p. 212, 1895.

Cheyenne sandstone: Belvidere, Kansas.

**Sequoia** sp.? Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

**Sequoia** sp., Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 384, 1875 [1876].

Laramie group: Black Buttes, Wyoming.

**Sequoia?** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 310, 1874 [1876].

——?: Middle Park, Colorado.

*Sequoia* sp., Lx. Rept. on Clays in N. J., p. 29, 1878.

Amboy clay: Burts Creek, New Jersey.

*Sequoia* sp., Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 723, 1898.

Payette formation: Marsh, Idaho.

**SERENOPSIS** Hollick. Bull. Torr. Bot. Club, vol. xx, p. 169, 1893.

**Serenopsis Kempii** Hollick. Bull. Torr. Bot. Club, vol. xx, p. 169, pl. cxlix, 1893; *ibid.*, vol. xx, p. 334, 335, pl. clxvi, 1893.

Cretaceous: Glen Cove, Long Island.

*Smilacites grandifolia* Ung. = *Smilax grandifolia*.

**SMILAX** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Smilax cyclophylla** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 520, 1863.

Miocene?: Birch Bay, Washington.

**Smilax Franklini** Heer. Fl. Foss. Arct., vol. i, p. 136, pl. xxi, f. 18, 1868.

Miocene?: Mackenzie River.

**Smilax grandifolia** (Ung.) Heer. Fl. Tert. Helv., vol. i, p. 82, pl. xxx, f. 8, 1855; Lx., Ann. Rept., op. cit., p. 385, 1872 [1873]; Tert. Fl., p. 94, pl. ix, f. 5, 1878.

*Smilacites grandifolia* Ung. Chlor. Prot., p. 129, pl. xl, f. 3, 1847.

Laramie group?: Carbon, Wyoming.

Laramie group: Canon City, Colorado, etc.

**Smilax grandifolia-cretacea** Lx. Fl. Dak. Gr., p. 40, pl. xlvi, f. 3, 1892.

Dakota group: Kansas.

**Smilax obtusangula?** Heer. Fl. Tert. Helv., vol. iii, p. 166, pl. cxlvii, f. 25, 1859; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Black Buttes, Wyoming.

**Smilax undulata** Lx. Fl. Dak. Gr., p. 39, pl. xlvi, f. 2, 1892.

Dakota group, Kansas.

**Smilax Wardii** Lx. Proc. U. S. Nat. Mus., vol. xi, p. 19, pl. xiii, f. 1, 1888.

Miocene; John Day Valley, Oregon.

**SPARGANIUM** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Sparganium stygium** Heer. Fl. Tert. Helv., vol. i, p. 101, pl. xlv, f. 1-4, 1855; Ward, Bull. U. S. Geol. Surv., no. 37, p. 18, pl. iii, f. 6, 7, 1887.

Fort Union group: Seven-Mile Creek, Montana.

**Sparganium!** sp., Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 285, 1871 [1872]. [Not afterwards mentioned by Lesquereux.]

Laramie group?: Three miles above Spring Canyon, Montana.

**Spathites** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.

Montana formation: Near Harpers, Wyoming.

**SPEGAZZINITES** Felix. Zeitschr. d. deutschen geol. Gesell. 1894, p. 279, 1894.

**Spegazzinites cruciformis** Felix. Zeitschr. d. deutschen geol. Gesell., Jahr. 1894, p. 279, pl. xix, f. 8, 1894; op. cit., Jahr. 1896, p. 255, 1896.

Eocene: Yanceys, Yellowstone National Park.

*Sphæria problematica* Kn. = *Sphærites problematicus*.

**SPHÆRITES** Unger. Gen. et Sp. Pl. Foss., p. 37, 1850.

*Sphærites lapideus* (Lx.) Mesch. = *Rostelliniles lapideus*.

**Sphærites myricæ** (Lx.) Meschinelli. Syllog. Fung. Foss., p. 23, 1892.

*Sphæria myricæ* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 190, 1872 [1873]; Tert. Fl., p. 34, pl. i, f. 4, 1878.

Green River group: Green River Station, Wyoming.

Laramie group: Black Buttes, Wyoming.

**Sphærites Lesquereuxi** Meschinelli. Syllog. Fung. Foss., p. 31, 1892.

*Sphæria rhytismoides* Lx. [non Ett., 1869]. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 382, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 308, 1874 [1876]; Tert. Fl., p. 35, pl. i, f. 5, 5a, 1878.

Laramie group: Black Buttes, Wyoming.

**Sphærites problematicus** Kn.

*Sphæria problematica* Kn. in Lx. Fl. Dak. Gr., p. 23, pl. xxxi, f. 2, 2a, 1891.

Dakota group: Kansas.

**SPHENOLEPIDIDIUM** Heer. Fl. Foss. du Portugal, p. 19, 1881.

**Sphenolepidium dentifolium** Font. Potomac Fl., p. 258, pl. cxxvii, f. 3, 4; cxxviii, f. 2-6; cxxix, f. 5; cxxx, f. 4-6, 10, 1889.

Potomac formation: Fredericksburg, Virginia.

**Sphenolepidium Kurrianum** (Dunk.) Heer. Fl. Foss. du Portugal, p. 19, pl. xii, f. 1b; xiii, f. 1b, 8b; xviii, f. 1-8, 1881; Font., Potomac Fl., p. 260, pl. cxxvi, f. 1, 5, 6; cxxviii, f. 1, 7; cxxix, f. 1, 4, 6, 8; cxxx, f. 11; cxxxi, f. 4; clxvii, f. 2, 1889.

*Thuites* (Cupressites?) Kurrianus Dunk. Monogr. Norddeutsch. Wealdenbildung., p. 20, pl. vii, f. 8, 1846.

Potomac formation: Dutch Gap Canal, Fredericksburg, near Brooke, and near Telegraph Station, Virginia.

**Sphenolepidium pachyphyllum** Font. Potomac Fl., p. 259, pl. cxxxi, f. 6, 7, 1889.

Potomac formation: Near Telegraph Station, Virginia.

Kootanie: Anthracite, British Columbia.

**Sphenolepidium parceramosum** Font. Potomac Fl., p. 257, pl. cxxix, f. 7; cxxx, f. 8; cxxxi, f. 2, 1889.

Potomac formation: Fredericksburg and near Brooke, Virginia.

**Sphenolepidium recurvifolium** Font. Potomac Fl., p. 258, pl. cxxvii, f. 2; cxxx, f. 2, 7, 1889.

Potomac formation: Near Dutch Gap Canal, near Potomac Run, and near Telegraph Station, Virginia.

**Sphenolepidium Sternbergianum** (Dunk.) Heer. Fl. Foss. du Portugal, p. 19, pl. xiii, f. 1a, 2-8; xiv, 1881; Font., Potomac Fl., p. 261, pl. cxxi, f. 8, 10, 11; cxxx, f. 9, 1889.

Muscites Sternbergianus Dunk. Monogr. Norddeutsch. Wealdenbildung, p. 20, pl. vii, f. 10, 1846.

Potomac formation: Near Potomac Run and Fredericksburg, Virginia.

**Sphenolepidium Sternbergianum densifolium** Font. Potomac Fl., p. 261, pl. cxviii, f. 7; cxxi, f. 5, 7, 9; cxxv, f. 2; cxxix, f. 3; cxxx, f. 1; cxxxi, f. 1, 3; cxxxii, f. 4, 1889; Proc. U. S. Nat. Mus., vol. xvi, p. 268, pl. xxxvi, f. 10, 1893.

Trinity division: Glenrose, Texas.

Potomac formation: Near Telegraph Station, near Potomac Run, and Fredericksburg, Virginia.

**Sphenolepidium virginicum** Font. Potomac Fl., p. 259, pl. cxxv, f. 4; clxvi, f. 6, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

**Sphenolepidium** sp., Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 90, f. (in text) 13, 1892.

Kootanie: Anthracite?, British Columbia.

**SPHENOPTERIS** Brongniart. Class. et Dist. Vég. Foss.: Mem. Mus. Hist. Nat., vol. viii, p. 233, 1822.

**Sphenopteris acrodentata** Font. Potomac Fl., p. 90, pl. xxxiv, f. 4, 1889.

Potomac formation: Dutch Gap Canal, Virginia; Baltimore, Maryland.

**Sphenopteris corrugata** Newby. Later Extinct Floras, p. 10, 1868.

Dakota group: Blackbird Hill, Nebraska.

**Sphenopteris elongata** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 511, 1863.

——: Point Doughty, Orcas Island; Protection Island.

*Sphenopteris eocenica* Ett. = *Dryopteris arguta*.

**Sphenopteris grevilicoides** Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 34, pl. xi, f. 10, 11, 1874; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard.

*Sphenopteris Lakesii* Lx. = *Dryopteris arguta*.

**Sphenopteris Guyottii** Lx. Cret. and Tert. Fl., p. 137, pl. xxi, f. 1-7, 1883.

Green River group: Florissant, Colorado.

**Sphenopteris latiloba** Font. Potomac Fl., p. 90, pl. xxxv, f. 3-5; xxxvi, f. 4-9; xxxvii, f. 1, 1889.

Kootanie: Anthracite, British Columbia.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Deep Bottom, and near Telegraph Station, Virginia.

*Sphenopteris Mantelli* Brongn. = *Onychiopsis Mantelli*.

*Sphenopteris membranacea* Lx. = *Dryopteris arguta*.

***Sphenopteris nigricans*** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 394, 1873 [1874]; Tert. Fl., p. 51, pl. ii, f. 4-5a, 1878.

Denver group: Golden, Colorado.

Laramie group: Black Buttes, Wyoming.

***Sphenopteris pachyphylla*** Font. Potomac Fl., p. 93, pl. i, f. 5, 1889.

Potomac formation: Trents Reach, Virginia.

***Sphenopteris spatulata*** Font. Potomac Fl., p. 93, pl. i, f. 4, 1889.

Potomac formation: Trents Reach, Virginia.

***Sphenopteris thyrsopteroides*** Font. Potomac Fl., p. 89, pl. xxv, f. 3; lviii, f. 5, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

***Sphenopteris valdensis*?** Heer. Fl. Foss. d. Portugal, p. 14, 1881;

Font., Proc. U. S. Nat. Mus., vol. xvi, p. 263, pl. xxxvi, f. 2, 1893.

Trinity division: Glenrose, Texas.

**SPHENOZAMITES** Brongniart. Tableau Vég. Foss., p. 61 [110], 1849.

***Sphenozamites*** sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, 1885 [1886].

Kootanie: Martin Creek, British Columbia.

*Spheria lapidea* Lx. = *Rossellinites lapideus*.

*Spheria myricæ* Lx. = *Sphærites myricæ*.

*Spheria rhytismoides* Lx. = *Sphærites Lesquereuxi*.

**SPIRÆA** Linnæus. Syst. Nat., ed. i, 1735.

***Spiræa Andersoni*** Heer. Fl. Foss. Alask., p. 39, pl. viii, f. 3, 1869.

Eocene?: Port Graham, Alaska.

**SPIRAXIS** Newberry. Ann. N. Y. Acad. Sci., vol. iii, p. 219, 1885.

***Spiraxis bivalvis*** Ward. Bull. U. S. Geol. Surv., no. 37, p. 14, pl. i, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

**STAPHYLEA** Linnæus. Sp. Pl., ed. i, p. 270, 1753.

***Staphylea acuminata*** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 415, 1873 [1874]; Tert. Fl., p. 267, pl. xlviii, f. 4, 5, 1878.

Green River group: Middle Park, Costellos Ranch, and Florissant, Colorado.

**STENOPTERIS** Saporta. Paléont. Française: Pl. Jur., vol. i, p. 290, 1870.

***Stenopteris virginica*** Font. Potomac Fl., p. 112, pl. xxi, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

**STERCULIA** Linnæus. Diss. Dass., p. 29, 1747.

***Sterculia aperta*** Lx. Cret. and Tert. Fl., p. 82, pl. x, f. 2, 3, 1883; Fl.

Dak. Gr., p. 185, pl. xxii, f. 4, 1892.

Dakota group: Kansas.

*Sterculia Drakei* Cummins=*Sterculia Snowii*.

*Sterculia elegans* Font. Potomac Fl., p. 314, pl. clvii, f. 2; clviii, f. 2, 3, 1889.

Potomac formation: Deep Bottom, Virginia.

*Sterculia labrusca* Ung. Foss. Fl. v. Sotzka, p. 45, pl. xxviii, f. 1-11, 1850; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

*Laurus labrusca* Ung. Gen. et Sp. Pl. Foss., p. 423, 1850.

Cretaceous: Marthas Vineyard.

*Sterculia Krejcii* Vel. Fl. Böhm. Kried., Theil ii, p. 22, pl. v, f. 1, 1883; Hollick, Bull. Geol. Soc. Am., vol. vii, p. 13, 1895.

Cretaceous: Marthas Vineyard.

*Sterculia lineariloba* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 358, 1874 [1876]. [Not afterwards referred to by Lesquereux.]

Dakota group: Clay Center, Kansas.

*Sterculia lugubris* Lx. Cret. and Tert. Fl., p. 81, pl. vi, f. 1-3, 1883.

Dakota group?: Near Golden, Colorado.

*Sterculia modesta* Sap. Lx.=*Sterculia Saportanea*.

*Sterculia mucronata* Lx. Fl. Dak. Gr., p. 182, pl. xxx, f. 1-4, 1892.

Dakota group: Kansas.

*Sterculia obtusiloba* Lx.=*Sterculia tripartita*.

*Sterculia reticulata* Lx. Fl. Dak. Gr., p. 185, pl. xxxiv, f. 10, 1892.

Dakota group: Kansas:

*Sterculia rigida* Lx. Cret. and Tert. Fl., p. 179, pl. xxxiv, f. 12, 1883.

Green River group: Florissant, Colorado.

*Sterculia Snowii* Lx. Fl. Dak. Gr., p. 183, pl. xxx, f. 5; pl. xxxi, f. 2, 3; pl. xxxii; pl. xxxiii, f. 1-4, 1892.

*Sterculia Drakei* Cum. Third Ann. Rept. Geol. Surv. Texas, 1891, p. 210, f. 8, 1892; Kn. in Hill, Am. Journ. Sci., vol. 1, p. 213, 1895.

Dakota group: Kansas; Big Tincumari Mountain, New Mexico.

Cheyenne sandstone: Belvidere, Kansas.

*Sterculia Snowii disjuncta* Lx. Fl. Dak. Gr., p. 184, pl. lviii, f. 6, 1892.

Dakota group: Kansas.

*Sterculia Saportanea* nom. nov.

*Sterculia modesta* Sap. Lesquereux, Cret. and Tert. Fl., p. 125, pl. xx, f. 5, 1883. [*S. modesta* Sap., 1868, preoccupied by *S. modesta* Heer, 1853-1855.]

Denver beds: Golden, Colorado.

*Sterculia tripartita* [Lx.] n. comb.

*Sterculia obtusiloba* Lx. Cret. and Tert. Fl., p. 82, pl. viii, f. 3, 1883.

*Aralia tripartita* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 248, pl. i, f. 1, 1874 [1876].

Dakota group: Kansas.

*Sterculia vetustula* Dn. Trans. Roy. Soc. Canada, vol. iii. sec. iv, p. 10, pl. iii, f. 2, 1885 [1886].

Intermediate series (Cretaceous): North Fork Old Man River, British Columbia.

*Sterculia* sp., Lx. Rept. on Clays in N. J., p. 28, 1878.

Amboy clay: Washington, New Jersey.

**Sterculia** sp., Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 133, pl. xiv, f. 4-7, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**STROBILITES** Lindley and Hutton. Foss. Fl. Gr. Brit., vol. ii, p. 23, pl. lxxxix, 1833-1835.

**Strobilites inquirendus** Hollick. Trans. N. Y. Acad. Sci., vol. xvi, p. 130, pl. xi, f. 1, 1897.

Clay marl (Upper Cretaceous): Cliffwood, New Jersey.

**STYRAX** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Styrax Ambra** Ung. Syll. Pl. Foss., pt. iii, p. 34, pl. xxiv, f. 19, 20, 1865; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 51, 1888.

Denver group: Golden, Colorado.

**Styrax laramiense** Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 51, 1888.

Denver group: Golden, Colorado.

**SYMPHOROCARPOPHYLLUM** Dawson. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 29, 1886 [1887].

**Symphorocarpophyllum albertum** Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 30, pl. ii, f. 17, 1886 [1887].

Canadian upper Laramie: Great Valley, British Columbia.

**Symphorocarpophyllum linnæiforme** Dn. Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 30, pl. ii, f. 18, 1886 [1887].

Canadian upper Laramie: Porcupine Creek.

**TÆNIOPTERIS** Brongniart. Prodr. Hist. Vég. Foss., p. 61, 1828.

**Tæniopteris Gibbsii** Newby. Bot. Journ. Nat. Hist., vol. vii, p. 512, 1863.

——: Point Doughty, Orcas Island.

**Tæniopteris plumosa** Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 24, pl. iv, f. 15, 1882 [1883].

Upper Cretaceous: Baynes Sound, Vancouver Island.

**TAONURUS** Fisher-Ooster. Die fossilen Fucoiden d. Schweizer-Alpen, p. 41, 1858.

**Taonurus incertus** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 10, 1885 [1886].

Kootanie: British Columbia (no locality).

**TAXITES** Brongniart. Prodr. Hist. Vég. Foss., p. 108, 1828.

**Taxites Langsdorffii** Brgt. = *Sequoia Langsdorffii*.

**Taxites Olriki** Heer. Fl. Foss. Arct., vol. i, p. 95, pl. 1, f. 21-24; xlv, f. a, b, c, 1868; Lx, Cret. and Tert. Fl., p. 240, pl. 1, f. 6, 6a, 1883.

Miocene: Corral Hollow, California.

Eocene?: Port Graham, Alaska; Mackenzie River.

Canadian upper Laramie: Roche Percée, Souris River.

**Taxites microphyllus** Heer. Fl. Foss. Alask., p. 24, pl. i, f. 9, 9b, 1869.

Eocene?: Port Graham, Alaska.

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**Taxites** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.  
[Wood.]

Belly River series: South Saskatchewan.

**Taxites** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887.  
[Fossil wood.]

Upper Laramie group: Red Deer River; Wood End Depot, Canada.

**Taxodites europæus** (Brongn.) Endl. = **Glyptostrobus europæus**.

**TAXODIUM** L. C. Richard. Ann. Mus. Paris, vol. xvi, p. 298, 1810.  
**Taxodium** (**Glyptostrobus**) **brookense** Font. = **Glyptostrobus brookense**.  
**Taxodium brookense angustifolium** Font. = **Glyptostrobus brookense angustifolius**.

**Taxodium cuneatum** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 517, 1863; Dn., Trans. Roy. Soc. Canada, 1882, p. 25.

Upper Cretaceous: Nanaimo and Protection Island.

Kootanie series: British Columbia (no locality).

**Taxodium** (**Glyptostrobus**) **denticulatum** Font. Potomac Fl., p. 253, pl. cxxiv, f. 1, 1889.

Potomac formation: Kankeys, Virginia.

**Taxodium distichum miocenum** Heer. Mioc. Balt. Fl., p. 18, pl. ii; pl. iii, f. 6, 7, 1869.

**Taxodium dubium** (Sternb.) Heer. Fl. Tert. Helv., vol. i, p. 49, pl. xvii, f. 5-15, 1855; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 409, 1873 [1874].

**Abies Nevadensis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873].

Eocene: Elko Station, Nevada; Alaska?; Carbon?; Evanston.

Fort Union group: Montana.

Miocene: John Day Valley, Oregon.

**Taxodium dubium** (Sternb.) Heer. = **Taxodium distichum miocenum**.

**Taxodium europæum** Brongn. = **Glyptostrobus europæus**.

**Taxodium** (**Glyptostrobus**) **expansum** Font. Potomac Fl., p. 252, pl. cxxiii, f. 1, 1889.

Potomac formation: Near Telegraph Station, Virginia.

**Taxodium** (**Glyptostrobus**) **fastigiatum** Font. = **Glyptostrobus fastigiatum**.

**Taxodium occidentale** Newby. Bost. Journ. Nat. Hist., vol. vii, p. 516, 1863; Ill. Cret. and Tert. Pl., pl. xi, f. 1-3, 1878.

Fort Union group: Yellowstone River, Montana.

Upper Laramie group: Canada.

**Taxodium** (**Glyptostrobus**) **ramosum** Font. Potomac Fl., p. 251, pl. cxxiii, f. 2, 3; cxxiv, f. 2; cxxvii, f. 1; cxxxii, f. 1; clxvi, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

Kootanie: Great Falls, Montana.

**Taxodium Tinajorum** Heer. Fl. Foss. Alask., p. 22, pl. i, f. 1-5, 1869.

Eocene?: Port Graham, Alaska.

**Taxodium Tinajorum?** Heer, Lx. [Ann. Rept., 1871, p. 285] = Unknown.  
[Not afterwards recognized by Lesquereux.]



**Taxodium (Glyptostrobus) virginicum** Font. Potomac Fl., p. 252, pl. cxi, f. 6, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Taxodium** sp., Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 56, pl. vi, f. 10, 1893 [1894].

Upper Cretaceous: Nanaimo, Vancouver.

**TAXOXYLUM** Unger. Chlor. Prot., p. 33, 1842.

**Taxoxylon** sp., Dn. Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 331, 1875.

Lignitic tertiary: "Forty-ninth parallel."

**Taxoxylon** sp., Dn. Geol. Surv. Canada, Rept. of Progress for 1872-73, Appen. I, p. 67, 1873.

Lower Cretaceous: British Columbia.

**TAXUS** (Tournefort) Linnæus. Syst., ed. i, 1735.

*Taxus baccata* L., Penhallow, 1890 = *Taxus minor*.

*Taxus canadensis* Willd., Penhallow (1896) = *Taxus minor*.

**Taxus minor** (Mx.) Britton.

*Taxus baccata* L. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 321, 333, 1890.

*Taxus canadensis* Willd. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 67, 73, 1896.

Pleistocene: Don River and Don Valley, Toronto; Cape Breton; Fort Madison, Iowa; Solsgrith and Rolling River, Manitoba; Bloomington, Illinois.

*Terminalia Radobojensis* Heer, Lesquereux [1871] = *Magnolia Lesleyana*, *Tetranthera* Jacq. = *Malapœenna*.

**Tetranthera præcursoria** Lx. Cret. and Tert. Fl., p. 228, pl. xlviii, f. 2, 1883.

Fort Union group: Bad Lands, Dakota.

*Tetranthera sessiliflora* Lx. = *Litsea sessiliflora* and *L. Weediana*.

**THINNFELDIA** Ettingshausen. Abhandl. d. k. k. geol. Reichsanstalt, vol. i, abt. iii, no. 3, p. 2, 1852.

**Thinnfeldia granulata** Font. Potomac Fl., p. 111, pl. xxvi, f. 10-12; xxvii, f. 1-5, 8; pl. clxix, f. 1, 1889.

Potomac formation: Near Dutch Gap Canal and near Potomac Run, Virginia.

**Thinnfeldia lanceolata** Kn. Bull. U. S. Geol. Surv., no. 105, p. 49, pl. v, f. 5, 1893.

Laramie group: Bozeman coal field, Montana.

*Thinnfeldia Lesquereuxiana* Heer. = *Thinnfeldia subintegrifolia*.

**Thinnfeldia montana** nom. nov.

*Thinnfeldia polymorpha* \* (Lx.) Kn. Proc. Biol. Soc. Wash., vol. vii, p. 153, 1892; Bull. U. S. Geol. Surv., no. 105, p. 47, pl. v [il], f. 1-4, 1893.

*Salisburya polymorpha* Lx. Am. Journ. Sci., 2d ser., vol. xxvii, p. 362, 1859 [nomen nudum]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 404, 1872 [1873].

[\* *Thinnfeldia polymorpha* (Lx.) Kn., 1892, preoccupied by *T. polymorpha* Ett., 1860.]

Laramie and Livingston group: Bozeman coal field. Montana.

*Thinnfeldia polymorpha* (Lx.) Kn. = *Thinnfeldia montana*.

*Thinnfeldia rotundiloba* Font. Potomac Fl., p. 111, pl. xxvii, f. 6, 7, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

*Thinnfeldia subintegrifolia* (Lx.). n. comb.

*Phyllocladus subintegrifolius* Lx. Am. Journ. Sci., vol. xlvii, p. 92, 1868; Cret. Fl., p. 54, pl. i, f. 12, 1874; Fl. Dak. Gr., p. 34, pl. ii, f. 1-3, 1892.

*Thinnfeldia Lesquereuxiana* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 37, pl. xlv, f. 9, 10; xlv, f. 11, 12a, b; Hollick, Trans. N. Y. Acad. Sci., vol. xi, p. 99, pl. iii, f. 6, 1892; Newby, Fl. Amboy Clays, p. 59, pl. xi, f. 1-17, 1895 [1896].

Dakota group: Kansas; Decatur, Nebraska.

Amboy clay: Cretaceous; Atane, Greenland.

*Thinnfeldia variabilis* Font. Potomac Fl., p. 110, pl. xvii, f. 3-7; xviii, f. 1-6, 1889.

Potomac formation: Near Brooke and near Potomac Run, Virginia.

Knoxville beds: Tehama County, California.

**THUITES** Sternberg. Vers., vol. i, Fasc. iii, p. 39, 1823.

*Thuites crassus* Lx. = *Brachyphyllum macrospermum*.

*Thuites (Chamaecyparis) alaskensis* Lx. Proc. U. S. Nat. Mus., vol. v, p. 445, pl. vi, f. 7-9, 1882 [1883].

Eocene?: Unga Island, Alaska.

*Thuites callitrina* Ung. Chlor. Prot., p. 22, pl. vi, f. 2, 18; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 371, 1872 [1873]. [Not afterwards mentioned by Lesquereux.]

Green River group: Castello's Ranch, Colorado.

*Thuites kurrianus* Dunk. = *Sphenolepidium kurrianum*.

*Thuites Meriani* Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 73, pl. xvi, f. 17, 18, 1873; Newby, Fl. Amboy Clays, p. 54, pl. x, f. 5, 1896.

Amboy clay: No location.

**THUJA** Linnaeus. Hort. Cliff., p. 449, 1737.

*Thuja Garmani* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 372, 1872 [1873]; Cret. and Tert. Fl., p. 139, 1883 [1884].

Green River group: Elko Station, Nevada.

*Thuja cretacea* (Heer.) Newby. Fl. Amboy Clays, p. 53, pl. x, f. 1, 1a, 1895 [1896].

*Libocedrus cretacea* Heer. Fl. Foss. Arct., vol. vi, abt. ii, p. 49, pl. xxix, f. 1, 2; xliii, f. 14, 1882.

Amboy clay: South Amboy, New Jersey.

*Thuja interrupta* Newby. Later Extinct Floras, p. 42, 1868; Dn., Trans. Roy. Soc. Canada, vol. iv, sec. iv, p. 22, pl. i, f. 3, 4, 1886 [1887].

Fort Union group: Porcupine Creek; Fort Union, North Dakota.

*Thuja occidentalis* L. Spec. Pl., p. 1002, 1753; Dn., Can. Nat., vol. ii, p. 422, 1857; Geol. Hist. Pl., p. 229, 1888; Britton, Trans. N. Y. Acad. Sci., vol. v, p. 218, 1886.

Post-Pliocene: Montreal, Canada.

Pleistocene: Cedar Creek and Natural Bridge, Virginia; Marietta, Ohio.

**Thuja** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 34, 1887.  
[Fossil wood.]

Canadian upper Laramie: Four hundred mile Point, forty-ninth parallel; Middle Fork Old Man River.

**Thuja** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887.  
[Wood.]

Belly River series: Old Man River; Ribstone Creek; Twenty-Mile Creek.

**Thuja** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

**THYRSOPTERIS** Kunze. Linnæa, vol. ix, p. 507, 1834.

**Thyrsopteris alata** Font. Potomac Fl., p. 124, pl. xxxvi, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Thyrsopteris angustifolia** Font. Potomac Fl., p. 131, pl. xlv, f. 4; xlv, f. 3; xlviii, f. 2; xlix, f. 3, 4; lv, f. 2; lviii, f. 8, 1889.

Potomac formation: Trents Reach, near Dutch Gap Canal, near Brooke, and near Potomac Run, Virginia.

**Thyrsopteris angustiloba** Font. Potomac Fl., p. 134, pl. xlviii, f. 3-5; lv, f. 3, 1889.

Potomac formation: Fredericksburg, near Dutch Gap Canal, Trents Reach, and White House Bluff, Virginia.

**Thyrsopteris bella** Font. Potomac Fl., p. 139, pl. liii, f. 5; lv, f. 6, 7; lvi, f. 2, 5; lvii, f. 1, 5; lviii, f. 4, 1889.

Potomac formation: Fredericksburg, Trents Reach, White House Bluff, and near Dutch Gap Canal, Virginia.

**Thyrsopteris brevifolia** Font. Potomac Fl., p. 121, pl. xxiv, f. 5, 10.

Potomac formation: Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

**Thyrsopteris brevipennis** Font. Potomac Fl., p. 124, pl. xxxiv, f. 3; xxxvi, f. 2; xxxvii, f. 3, 9; xxxviii, f. 1; xli, f. 4, 1889.

Potomac formation: Dutch Gap Canal and Deep Bottom, Virginia; Baltimore, Maryland.

Kootanie: Great Falls, Montana.

**Thyrsopteris crassinervis** Font. Potomac Fl., p. 130, pl. xli, f. 1-3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Thyrsopteris crenata** Font. Potomac Fl., p. 127, pl. xxxix, f. 1, 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Thyrsopteris decurrens** Font. Potomac Fl., p. 130, pl. xliii, f. 7; xlv, f. 2, 4; xlix, f. 5-7, 1889.

Potomac formation: Dutch Gap Canal, Fredericksburg, near Brooke, near Potomac Run, Virginia.

**Thyrsopteris densifolia** Font. Potomac Fl., p. 129, pl. xxxix, f. 3; xl, f. 2-5; li, f. 5, 1889.

Potomac formation: Fredericksburg, and near Brooke, Virginia.

- Thyrsopteris dentata** Font. Potomac Fl., p. 121, pl. xxiv, f. 4, 6, 7, 9; xxv, f. 1, 2, 1889.  
Potomac formation: Fredericksburg, Dutch Gap Canal, and near Potomac Run, Virginia.
- Thyrsopteris distans** Font. Potomac Fl., p. 134, pl. xlvii, f. 3; liv, f. 8, 1889.  
Potomac formation: Near Brooke, Virginia.
- Thyrsopteris divaricata** Font. Potomac Fl., p. 125, pl. xxxvii, f. 5-8; clxx, f. 1, 1889.  
Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.
- Thyrsopteris elliptica** Font. Potomac Fl., p. 133, pl. xxiv, f. 3; xlv, f. 1; l, f. 6, 9; li, f. 4, 6, 7; liv, f. 6; lv, f. 4; lvi, f. 6, 7; lvii, f. 6; lviii, f. 2, 1889.  
Potomac formation: Fredericksburg and Dutch Gap Canal, Virginia.
- Thyrsopteris heteroloba** Font. Potomac Fl., p. 139, pl. liii, f. 4, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris heteromorpha** Font. Potomac Fl., p. 136, pl. lii, f. 1, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris heterophylla** Font. Potomac Fl., p. 142, pl. lviii, f. 3, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris inæquipinnata** Font. Potomac Fl., p. 142, pl. lvii, f. 3, 8, 1889.  
Potomac formation: Near Dutch Gap Canal, Virginia.
- Thyrsopteris insignis** Font. Potomac Fl., p. 127, pl. xxxix, f. 4; xl, f. 1; xli, f. 6; xlii, f. 1, 2, 4; xliii, f. 1, 3, 1889.  
Potomac formation: Fredericksburg and near Potomac Run, Virginia.  
Kootanie: Great Falls, Montana.
- Thyrsopteris insignis angustipennis** Font. Potomac Fl., p. 128, pl. xlii, f. 3; xliii, f. 2, 1889.  
Potomac formation: Fredericksburg, Virginia.
- Thyrsopteris Meekiana** Font. Potomac Fl., p. 125, pl. xxxviii, f. 2-4, 8; l, f. 7, 8; li, f. 3, 1889.  
Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia; Baltimore, Maryland.
- Thyrsopteris Meekiana angustiloba** Font. Potomac Fl., p. 126, pl. xxxviii, f. 5-7, 9; xliii, f. 8; xlv, f. 3; xlvii, f. 4; xlviii, f. 1; liv, f. 2, 11; lv, f. 1; lvi, f. 1, 3, 1889.  
Potomac formation: Baltimore, Maryland; near Dutch Gap Canal, near Brooke, and Fredericksburg, Virginia.
- Thyrsopteris microloba** Font. Potomac Fl., p. 140, pl. lvii, f. 4, 1889.  
Potomac formation: Near Dutch Gap Canal, Virginia.

**Thyrsopteris microloba alata** Font. Potomac Fl., p. 140, pl. lv, f. 5; lviii, f. 1, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

Kootanie: Great Falls, Montana.

**Thyrsopteris microphylla** Font. Potomac Fl., p. 131, pl. xlv, f. 1, 2, 4, 5, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

**Thyrsopteris nana** Font. Potomac Fl., p. 141, pl. lvi, f. 4, 8, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

**Thyrsopteris nervosa** Font. Potomac Fl., p. 122, pl. xxv, f. 4, 5, 16; xxxvii, f. 2, 4; xxxix, f. 5; xl, f. 6, 1889.

Potomac formation: Fredericksburg and near Potomac Run, Virginia.

**Thyrsopteris obtusiloba** Font. Potomac Fl., p. 143, pl. lviii, f. 7, 10, 1889.

Potomac formation: Dutch Gap Canal and near Potomac Run, Virginia.

**Thyrsopteris pachyphylla** Font. Potomac Fl., p. 135, pl. l, f. 3, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Thyrsopteris pachyrachis** Font. Potomac Fl., p. 132, pl. xlvi, f. 3, 5; xlvii, f. 1, 2; xlix, f. 1, 1889.

Potomac formation: Fredericksburg, near Potomac Run, and near Dutch Gap Canal, Virginia.

**Thyrsopteris pecopteroides** Font. Potomac Fl., p. 135, pl. li, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Thyrsopteris pinnatifida** Font. Potomac Fl., p. 136, pl. li, f. 2; liv, f. 4, 5, 7; lvii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Thyrsopteris rarinervis** Font. Potomac Fl., p. 123, pl. xxvi, f. 6, 7; xliii, f. 4-6; xlv, f. 1, 2, 5; xlix, f. 2; clxix, f. 6, 7, 1889.

Potomac formation: Fredericksburg, near Brooke, White House Bluff, and Trents Reach, Virginia.

Knoxville beds: Tehama County, California.

Kootanie: Great Falls, Montana.

**Thyrsopteris retusa** Font. Potomac Fl., p. 144, pl. lix, f. 10, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Thyrsopteris rhombifolia** Font. Potomac Fl., p. 138, pl. lii, f. 5; liv, f. 1, 1889.

Potomac formation: Fredericksburg and near Dutch Gap Canal, Virginia.

**Thyrsopteris rhombiloba** Font. Potomac Fl., p. 144, pl. lix, f. 7; lx, f. 8, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Thyrsopteris sphenopteroides** Font. Potomac Fl., p. 143, pl. lviii, f. 6, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Thyrsopteris squarrosa** Font. Potomac Fl., p. 143, pl. lix, f. 3, 1889.

Potomac formation: Near Potomac Run and Telegraph Station, Virginia.

**Thyrsopteris varians** Font. Potomac Fl., p. 137, pl. lii, f. 2-4; liii, f. 1-3; liv, f. 10; lvii, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

**Thyrsopteris virginica** Font. Potomac Fl., p. 120, pl. xxiv, f. 1, 1889.

Potomac formation: Near Potomac Run, Virginia.

**TILIA** (Tournefort) Linnæus. Syst., ed. i, 1735.

**Tilia alaskana** Heer. Fl. Foss. Alask., p. 36, pl. x, f. 2, 3, 1869.

Eocene?: Port Graham, Alaska.

*Tilia antiqua* Newby. = *Viburnum antiquum*.

**Tilia populifolia** Lx. Cret. and Tert. Fl., p. 179, pl. xxxiv, f. 8, 9, 1883.

Green River group: Florissant, Colorado.

**TILIAEPHYLLUM** Newberry. Fl. Amboy Clays, p. 109, 1896.

**Teliaephyllum dubium** Newby. Fl. Amboy Clays, p. 109, pl. xv, f. 5, 1895 [1896].

Amboy clay: Fish House.

**TMESIPTERIS** Bernhardt. In Schrad. Journ., vol. ii, p. 131, 1800.

**Tmesipteris Alleni** (Lx.) Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 256, pl. ccv, f. 12, 1894.

*Salvinia Alleni* Lx. Tert. Fl., p. 65, pl. v, f. 11, 1878.

*Ophioglossum Alleni* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 371, 1872 [1873].

Green River group: South Park, Colorado.

*Todia?* *Saportanea* Lx. = *Lomatia?* *Saportanea*.

*Torreyia* Arnott, 1838 = *Tumion Rafinesque*, 1840.

*Torreyia densifolia* Dn. = *Tumion densifolium*.

*Torreyia dicksonioides* Dnl. = *Tumion dicksonioides*.

*Torreyia falcata* Font. = *Tumion falcatum*.

*Torreyia oblanceolata* Lx. = *Tumion oblanceolatum*.

*Torreyia virginica* Font. = *Tumion virginicum*.

**TOXYLON** Rafinesque. In Am. Month. Mag., vol. ii, p. 18, 1817.

**Toxylon pomiferum** Raf.

*Maelura auriantia* Nutt. Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 69, 72, 1896.

Pleistocene: Don River, Canada.

**TRAPA** Linnæus. Gen. Pl., ed. i, p. 359, 1737.

**Trapa americana** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv., pt. iii, p. 733, pl. cii, f. 7a, 1898.

Payette formation: Idaho City, Idaho.

**Trapa borealis** Heer. Fl. Foss. Alask., p. 38, pl. viii, f. 9-14, 1869; Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, pl. xvi, f. 10, 1875.

Belly River series: Vermilion River.

Eocene?: Port Graham, Alaska.

Lower Laramie group: Red Deer and Rosebud rivers, Canada.

**Trapa ? microphylla** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 369, 1875 [1876]; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. p. 304, 1874 [1876]; Lx., Tert. Fl., p. 295, pl. lxi, f. 16-17a, 1878; Ward, Bull. U. S. Geol. Surv., no. 37, p. 64, pl. xxviii, f. 2-5, 1887.

? Neuropteris angulata Newby. Rept. Colo. River of the West, by Ives, p. 131, pl. iii, f. 5, 1861.

Upper Laramie group: Great Valley.

Fort Union group: Burns's Ranch, Montana.

Laramie group: Converse County, Wyoming.

Montana group: Point of Rocks, Wyoming.

Lower Laramie group: Bad Lands, Red Deer and Rosebud rivers, and Pincher Creek, Canada.

**Trapa ? occidentalis** Kn. Eighteenth Ann. Rept. U. S. Geol. Surv. pt. iii, p. 734, pl. cii, f. 7b, 1898.

Payette formation: Idaho City, Idaho.

**Trapa** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 142, 1897.

Laramie group?: "Dutton Creek coal," Wyoming.

**TRICALYCITES** Newberry. Fl. Amboy Clays, p. 132, 1895 [1896.]

**Tricalycites papyraceus** Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 30-38, 1895 [1896]; Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 63, pl. clxxx, f. 8, 1894.

Cretaceous: Long Island.

Amboy clay: Woodbridge, New Jersey.

**TRICARPELLITES** Bowerbank. Hist. Foss. Fruits and Seeds, London Clay, p. 76, 1840.

**Tricarpellites striatus** Newby. Fl. Amboy Clays, p. 132, pl. xlvi, f. 9-13, 1895 [1896].

Amboy clay: Woodbridge, New Jersey.

**Trunk No. 1** Font. Potomac Fl., p. 189, pl. clxxiv-clxxviii, 1889.

Potomac formation.

**Trunk No. 2** Font. Potomac Fl., p. 191, pl. clxxix, clxxx, 1889.

Potomac formation: Maryland.

**TSUGA** Carrier. Trait. Conif., p. 185, 1855.

**Tsuga Mertensiana** (Bongn.) Carr. Kn., Jour. Geol., vol. iii, p. 531, 1895.

Interglacial: Muir Glacier, Alaska.

**TUMION** Rafinesque. Amen. Nat., p. 63, 1840.

**Tumion densifolium** (Dn.) n. comb.

*Torreia densifolia* Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 25; pl. v, f. 20, 20a, 1882 [1883].

Upper Cretaceous: Protection Island.

**Tumion dicksonioides** (Dn.) n. comb.

*Torreia dicksonioides* Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 21, pl. ii, f. 4, 1882 [1883].

———: Pine River, Northwest Territory.

**Tumion falcatum** (Font.) n. comb.

*Torreya falcata* Font. Potomac Fl., p. 235, pl. cxiii, f. 4, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Tumion oblanceolatum** (Lx.) n. comb.

*Torreya oblanceolata* Lx. Cret. and Tert. Fl., p. 30, pl. i, f. 2, 1883.

Dakota group?: Near Golden, Colorado.

**Tumion virginicum** (Font.) n. comb.

*Torreya virginica* Font. Potomac Fl., p. 234, pl. cix, f. 8, 1889.

Potomac formation: Near Brooke, Virginia.

**TYPHA** Linnæus. Syst., ed. i, 1735.

**Typha latifolia?** L. Penhallow, Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 73, 1896.

Pleistocene: Besserers Wharf, Ottawa River.

**Typha latissima** Al. Br. in Stizenberger. Versteinerungen, p. 75;

Lx., Cret. and Tert. Fl., p. 141, pl. xxiii, f. 4, 4a, 1883.

Green River group: Uinta County, formerly but incorrectly called, Randolph County, Wyoming.

**TYSONIA** Fontaine. Potomac Fl., p. 186, 1889.

*Tysonia marylandica* Font. = *Cycadeoidea marylandica*.

*Ulmmania* Newby. = *Ullmannia*.

**ULLMANNIA** Göppert. Monogr. Foss. Conif., p. 185, 1850.

**Ullmannia** sp. (Newby).

*Ulmmania* sp., Newby. Proc. Lyc. Nat. Hist. N. Y., 2d ser., Jan. 3 to Mar. 3, 1873, p. 10, 1873.

Cretaceous: Keyport, New Jersey.

*Ulmiphyllum* Font. (1889) = *Ulmophyllum* Ett. (1883).

*Ulmiphyllum brookense* Font. = *Ulmophyllum brookense*.

*Ulmiphyllum crassinerve* Font. = *Ulmophyllum crassinerve*.

*Ulmiphyllum tenuinerve* Font. = *Ulmophyllum tenuinerve*.

**ULMITES** Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890.

**Ulmities pusillus** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 24, 1890.

Eocene?: North Similkameen River, British Columbia.

**ULMOPHYLLUM** Ettingshausen. Tert. Fl. Austr.: Denkschr. Wien. Akad., vol. xlvii, abt. i, p. 26, 1883.



***Ulmophyllum brookense* (Font.).**

*Ulmophyllum brookense* Font. Potomac Fl., p. 312, pl. clv, f. 8; CXXXI, f. 7, 1889.

Potomac formation: Near Brooke, Virginia.

***Ulmophyllum crassinerve* (Font.)**

*Ulmophyllum crassinerve* Font., Potomac Fl., p. 313, pl. clviii, f. 6, 7, 1889.

Potomac formation: Deep Bottom, Virginia.

***Ulmophyllum priscum* Dn. Trans. Roy. Soc. Canada, vol. xi, sec. iv, p. 59, pl. viii, f. 28, 1893 [1894].**

Upper Cretaceous: Port McNeill, Vancouver Island.

***Ulmophyllum tenuinerve* (Font.)**

*Ulmophyllum tenuinerve* Font. Potomac Fl., p. 313, pl. clviii, f. 1, 1889.

Potomac formation: Near Brooke, Virginia.

***ULMUS* (Tournefort) Linnæus. Syst., ed. i, 1735.*****Ulmus affinis* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 16, pl. iv, f. 4, 5, 1878.**

Miocene: Table Mountain, California.

***Ulmus alata*? Michx. Lx., Am. Journ. Sci., vol. xxvii, p. 365, 1859.**

Pleistocene: Banks of Mississippi, near Columbus, Kentucky.

***Ulmus americana* L. Hollick, Bull. Torr. Bot. Club, vol. xix, p. 332, 1892; Penhallow in Coleman, Journ. Geol., vol. iii, p. 635, 1895; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 68, 73, 1896.**

Miocene?: Bridgeton, New Jersey.

Pleistocene: Don River, Canada.

***Ulmus antedecens* Lx. Bull. Mus. Comp. Zoöl., vol. xvi, p. 49, 1888.**

Denver group: Golden, Colorado.

***Ulmus Braunii* Heer. Fl. Tert. Helv., vol. ii, p. 59, pl. lxxix, f. 14-21, 1856; Lx., Cret. and Tert. Fl., p. 161, pl. xxvii, f. 1-4, 8, 1883.**

Green River group: Florissant, Colorado.

Eocene?: Kamloops, British Columbia.

***Ulmus Brownellii* Lx. Cret. and Tert. Fl., p. 160, pl. xxviii, f. 2, 4, 1883.**

Green River group: Florissant, Colorado, White River.

***Ulmus californica* Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 15, pl. iv, f. 1, 2; pl. vi, f. 7a, 1878; Cret. and Tert. Fl., p. 265, pl. xlvB, f. 3, 4, 7, 1883.**

Miocene: Chalk Bluffs and Table Mountain, California.

Miocene: John Day Valley, Oregon.

***Ulmus dubia* Dn. Trans. Roy. Soc. Canada, vol. i, sec. iv, p. 27, pl. vii, f. 29, 1882 [1883].**

Upper Cretaceous: Baynes Sound.

***Ulmus grandifolia* Newby. Proc. U. S. Nat. Mus., vol. v, p. 508, 1882 [1883].**

Tertiary: Tongue River, Wyoming.

**Ulmus Hilliae** Lx. Cret. and Tert. Fl., p. 160, pl. xxviii, f. 1, 3, 1883.

Green River group: Florissant, Colorado.

**Ulmus?** irregularis Lx. = *Ficus* irregularis.

**Ulmus minima** Ward. Bull. U. S. Geol. Surv., no. 37, p. 45, pl. xxiii, f. 3, 4, 1887.

Fort Union group: Clear Creek, Montana.

**Ulmus orbicularis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 46, pl. xxiii, f. 6, 1887.

Fort Union group: Clear Creek, Montana.

**Ulmus planeroides** Ward. Bull. U. S. Geol. Surv., no. 37, p. 44, pl. xxiii, f. 1, 2, 1887.

Fort Union group: Clear Creek, Montana.

**Ulmus præcursor** Dn. Trans. Roy. Soc. Canada, vol. iv. sec. iv, p. 28, pl. ii, f. 11, 1886 [1887].

Upper Laramie group: Canada (exact locality not given).

**Ulmus plurinervia** Ung. Chlor. Prot., p. 95, pl. xxv, f. 1-4, 1847; Heer, Fl. Foss. Alask., p. 34, pl. v, f. 1, 1869.

Eocene?: Port Graham, Alaska.

Miocene: John Day Valley, Oregon.

**Ulmus pseudo-americana** Lx. Cret. and Tert. Fl., p. 249, pl. liv, f. 10, 1883.

Miocene: Bridge Creek and John Day Valley, Oregon.

**Ulmus pseudo-fulva** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 16, pl. iv, f. 3, 1878.

Miocene: Chalk Bluffs, California.

**Ulmus quercifolia** Ung. Chlor. Prot., p. 96, pl. xxv, f. 5, 1847; Lx., Bull. Mus. Comp. Zoöl., vol. xvi, p. 49, 1888.

Denver group: Golden, Colorado.

**Ulmus racemosa** Thomas. Penhallow, Bull. Geol. Soc. Am., vol. i, p. 323, 1890; Kn., Am. Geol., vol. xviii, p. 371, 1896.

Pleistocene: Don River, Toronto.

Glacial: Morgantown, West Virginia.

**Ulmus rhamnifolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 45, pl. xxiii, f. 5, 1887.

Fort Union group: Clear Creek, Montana.

**Ulmus sorbifolia** Göpp. Zeitschr. Deutsch. geol. Gesell., vol. iv, p. 492, 1852; Lx., Proc. U. S. Nat. Mus., vol. v, p. 447, 1882.

Eocene?: Cook Inlet, Alaska.

**Ulmus speciosa** Newby. Proc. U. S. Nat. Mus., vol. v, p. 507, 1882 [1883].

Miocene?: Bridge Creek, Oregon.

**Ulmus tenuinervis** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 412, 1873 [1874]; Tert. Fl., p. 188, pl. xxvi, f. 1-3, 1878.

Green River group: Florissant, Colorado.

**Ulmus** sp., Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 33, 1887. [Wood.]

Fort Pierre series: Head of Swift Current.

**Undetermined fern** Font. Potomac Fl., p. 119, pl. xxi, f. 12, 1889.

Potomac formation: Near Dutch Gap Canal, Virginia.

**Undetermined fern in circinate vernation** sp., Font. Potomac Fl., p. 145, pl. lix, f. 5, 1889.

Potomac formation: Near Potomac Run, Virginia.

**Undetermined plant** (a) Font. Potomac Fl., p. 274, pl. cxxxvi, f. 13, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (b) Font. Potomac Fl., p. 274, pl. cxxxvi, f. 14, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (c) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 1, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (d) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 2, 3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (e) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (f) Font. Potomac Fl., p. 275, pl. cxxxvii, f. 5, 1889.

Potomac formation: Fredericksburg, Virginia.

**Undetermined plant** (g) Font. Potomac Fl., p. 275, pl. clxix, f. 4, 5, 1889.

Potomac formation: Baltimore, Maryland.

**Undetermined plant** (h) Font. Potomac Fl., p. 276, pl. clxix, f. 9, 1889.

Potomac formation: Baltimore, Maryland.

**Undetermined plant** (i) Font. Potomac Fl., p. 276, pl. clxxiii, f. 11, 1889.

Potomac formation: Baltimore, Maryland.

**VACCINOPHYLLUM** Dawson. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, 1890.

**Vaccinophyllum quæstum** Dn. Trans. Roy. Soc. Canada, vol. viii, sec. iv, p. 88, f. (in text) 23, 1890.

Eocene?: Similkameen River, British Columbia.

**VACCINIUM** Linnaeus. Syst., ed. i, 1735.

**Vaccinium coloradense** Lx. Proc. U. S. Nat Mus., vol. x, p. 42, pl. iii, f. 4, 5, 1887.

Denver group: Silver Cliff, Colorado.

**Vaccinium Friesii** Heer. Fl. Foss. Alask., p. 35, pl. viii, f. 4, 1869.

Eocene?: Port Graham, Alaska.

**Vaccinium reticulatum** Al. Br. in Stizenberger. Verzeichniss, p. 82, 1851; Lx., Tert. Fl., p. 235, pl. lix, f. 6, 1878.

Eocene?: Cook Inlet, Alaska.

Green River group: Florissant, Colorado.

**Vaccinium uliginosum** L. Macoun in Coleman Journ. Geol., vol. iii, p. 626, 1895.

Pleistocene: Scarboro Heights, Ontario.

**VALLISNERIA** Michaux. Ex Linnæus, Gen. Pl., ed. i, p. 300, 1737.

**Vallisneria** sp., Penhallow. Bull. Geol. Soc. Am., vol. i, p. 325, 1890; Trans. Roy. Soc. Canada, 2d ser., vol. ii, sec. iv, p. 64, 73, 1896.

Pleistocene: Rolling River, Manitoba; Besserers Wharf, Ottawa River.

**VIBURNITES** Lesquereux. Fl. Dak. Gr., p. 124, 1892.

**Viburnites crassus** Lx. Fl. Dak. Gr., p. 124, pl. xlv, f. 1-4, 1892.

Dakota group: Kansas.

**Viburnites Evansanus** Ward. Journ. Geol., vol. ii, p. 261, 262, 1894.

Dakota group: Black Hills, South Dakota.

**Viburnites Masoni** Lx. Fl. Dak. Gr., p. 125, pl. xlv, f. 5, 1892.

Dakota group: Kansas.

**VIBURNUM** Linnæus. Syst., ed. i, 1735.

**Viburnum anceps** Lx. = *Platanus rhomboidea*.

**Viburnum antiquum** (Newby.) Hollick. MSS.

*Viburnum tilioides* Ward. Bull. U. S. Geol. Surv., no. 37, p. 107, pl. i, f. 1-3; pl. ii, f. 1-8; pl. iii, f. 1, 2, 1887.

*Tilia antiqua* Newby. Later Extinct Floras, p. 52, 1868.

Fort Union group: Clear Creek, Montana.

Denver group: Golden, Colorado.

**Viburnum asperum** Newby. Later Extinct Floras, p. 54, 1868.

Fort Union group: Cracker Box and Seven-Mile creeks, Montana; Bad Lands, Dakota.

Canadian Upper Laramie: North Saskatchewan; Souris River.

**Viburnum betulæfolia** Ward. Bull. U. S. Geol. Surv., no. 37, p. 114, pl. lvii, f. 4, 1887.

Fort Union group: Burns's Ranch, Montana.

**Viburnum bridgetonense** Britton in Hollick. Bull. Torr. Bot. Club, vol. xix, p. 331, 1892.

Miocene?: Bridgeton, New Jersey.

**Viburnum calgarianum** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 18, 1885 [1886]; op. cit., vol. iv, p. 29, pl. ii, f. 14, 1886 [1887].

Canadian upper Laramie: Calgary, Canada; Shaganappi Point.

**Viburnum contortum** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv., p. 396, 1872 [1873]. [Not afterwards recognized by its author.]

Laramie group?: Black Buttes, Wyoming.

**Viburnum cuneatum** Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

**Viburnum dakotense** Lx. Cret. and Tert. Fl., p. 231, pl. xlviA, f. 9, 1883.

Fort Union group: Bad Lands, North Dakota.

**Viburnum Dentoni** Lx. Cret. and Tert. Fl., p. 231, pl. xlix, f. 2, 3, 1883.

Fort Union group: Bad Lands, North Dakota?

**Viburnum dichotomum** Lx. Ann. Rept., op. cit., p. 399, 1872 [1873]; Tert. Fl., p. 225, pl. xxxviii, f. 6, 1878.

**Viburnum rotundifolium** Lx. Ann. Rept., op. cit., p. 305, 1874 [1876]; Tert. Fl., p. 225, pl. xxxvii, f. 12; pl. xxxviii, f. 10; pl. lxi, f. 22, 1878.

**Viburnum Whymperi** Heer. Lx., Ann. Rept., op. cit., p. 395, 1872 [1873]; Tert. Fl., p. 225, pl. xxxviii, f. 7; pl. lxi, f. 23, 1878.

Laramie group: Black Buttes and Point of Rocks, Wyoming.

**Viburnum ellsworthianum** Lx. Fl. Dak. Gr., p. 121, pl. xxi, f. 6, 1892.

Dakota group: Kansas.

**Viburnum elongatum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. liv, f. 4, 5, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum erectum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. lv, f. 3, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum finale** Ward. Bull. U. S. Geol. Surv., no. 37, p. 115, pl. lvii, f. 5, 1887.

Fort Union group: Iron Bluff, Montana.

**Viburnum goldianum** Lx. Tert. Fl., p. 227, pl. lx, f. 2-2c, 1878.

Denver group: Golden, Colorado.

**Viburnum grandedentatum** Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

**Viburnum grewiopsidium** Lx. Fl. Dak. Gr., p. 120, pl. xxi, f. 4, 1892.

Dakota group: Kansas.

**Viburnum inaequilaterale** Lx. Fl. Dak. Gr., p. 119, pl. xxi, f. 2, 3, 1892.

Dakota group, Kansas.

**Viburnum integrifolium** Newby. MSS. Hollick, Bull. Torr. Bot. Club, vol. xxi, p. 54, pl. clxxvii, f. 7, 1894; Newby., Fl. Amboy Clays, p. 125, pl. xli, f. 1, 1895 [1896].

Cretaceous: Glen Cove, Long Island.

Amboy clay: Woodbridge, New Jersey.

**Viburnum Lakesii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 401, 1873 [1874]; Tert. Fl., p. 226, pl. xxxvii, f. 13, 1878.

Denver group: Golden, Colorado.

—?: Northwest Territory.

**Viburnum lanceolatum** Newby. Later Extinct Floras, p. 54, 1868.

Fort Union group: Fort Union, North Dakota.

Upper Laramie group: Porcupine Creek.

**Viburnum Lesquereuxii** Ward in Lx. Fl. Dak. Gr., p. 121, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii commune** Lx. Fl. Dak. Gr., p. 122, pl. liii, f. 2, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii cordifolium** Lx. Fl. Dak. Gr., p. 122, pl. lii, f. 9, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii lanceolatum** Lx. Fl. Dak. Gr., p. 123, pl. liii, f. 3, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii latus** Lx. Fl. Dak. Gr., p. 123, pl. lii, f. 10, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii longifolium** Lx. Fl. Dak. Gr., p. 122, pl. liii, f. 1, 1892.

Dakota group: Kansas.

**Viburnum Lesquereuxii rotundifolium** Lx. Fl. Dak. Gr., p. 122, pl. lii, f. 8, 1892.

Dakota group: Kansas.

**Viburnum? Lesquereuxii tenuifolium** Lx. Fl. Dak. Gr., p. 123, pl. lxiv, f. 13, 1892.

Dakota group: Kansas.

**Viburnum limpidum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 110, pl. liii, f. 3-6, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum macrodontum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 110, pl. liii, f. 2, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum marginatum** Lx. = *Platanus marginata*.

**Viburnum Newberrianum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 113, pl. lv, f. 4-9, 1887.

Fort Union group: Cracker Box Creek, Montana.

**Viburnum Nordenskiöldi** Heer. Fl. Foss. Alask., p. 36, pl. iii, f. 13, 1869.

Eocene?: Neniltschik, Alaska.

Fort Union group: Clear Creek, Montana; Little Missouri, Gladstone, and Bad Lands, North Dakota.

**Viburnum oppositinerve** Ward. Bull. U. S. Geol. Surv., no. 37, p. 112, pl. lv, f. 1, 2, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum oxycoccoides** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 17, 1885 [1886]; op. cit., vol. iv, p. 29, pl. ii, f. 15, 1886 [1887].

Upper Laramie group: Calgary, Shaganappi Point, Canada.

**Viburnum paucidentatum** Newby. Proc. U. S. Nat. Mus., vol. v, p. 511, 1882 [1883].

Tertiary: Tongue River, Wyoming.

**Viburnum perfectum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 109, pl. lii, f. 3, 4; pl. liii, f. 1, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum perplexum** Ward. Bull. U. S. Geol. Surv., no. 37, p. 111, pl. liv, f. 1, 1887.

Fort Union group: Clear Creek, Montana.

**Viburnum platanoides** Lx.=*Platanus platanoides*.

**Viburnum pubescens** Pursh. Dn., Rept. on Geol. and Res. near 49th Parallel, Appen. A, p. 330, 1875.

—: Porcupine Creek.

**Viburnum robustum** Lx. Fl. Dak. Gr., p. 120, pl. xx, f. 4-6, 1892.

Dakota group: Kansas.

**Viburnum rotundifolium** Lx.=*Viburnum dichotomum*.

**Viburnum saskatchuense** Dn. Trans. Roy. Soc. Canada, vol. v, sec. iv, p. 35, 1887 [1888].

Canadian upper Laramie: North Saskatchewan.

**Viburnum solitarium** Lx. Tert. Fl., p. 227, pl. lx, f. 3, 1878.

Denver group: Golden, Colorado.

**Viburnum spenophyllum** Kn. in Lx. Fl. Dak. Gr., p. 123, pl. liii, f. 4, 1892.

Dakota group: Kansas.

**Viburnum tilioides** Ward=*Viburnum antiquum*.

**Viburnum Whymperei** Heer. Fl. Foss. Aret., vol. ii, abt. iv, p. 475, pl. xlvi, f. 1b, 1869; Lx., Tert. Fl., p. 225, pl. xxxviii, f. 7; lxi, f. 23, 1878.

Fort Union group: Clear Creek, Montana.

Miocene: Shasta County, California.

**Viburnum** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134.

Fort Union group: Lightning Creek, Converse County, Wyoming.

**VITIPHYLLUM** Fontaine. Potomac Fl., p. 308, 1889.

**Vitiphyllum crassifolium** Font. Potomac Fl., p. 308, pl. cl, f. 9, 10, 1889.

Potomac formation: Potomac Run, Virginia.

**Vitiphyllum multifidum** Font. Potomac Fl., p. 309, pl. clxxiii, f. 1-9, 1889.

Potomac formation: Baltimore, Maryland.

**Vitiphyllum parvifolium** Font. Potomac Fl., p. 309, pl. clxxii, f. 11, 12, 1889.

Potomac formation: Baltimore, Maryland.

**VITIS** (Tournefort) Linnaeus. Syst., ed. i, 1735.

**Vitis Bruneri** Ward. Bull. U. S. Geol. Surv., no. 37, p. 69, pl. xxxii, f. 1, 2, 1887.

*Vitis carbonensis* Ward. Loc. cit., p. 70, pl. xxxii, f. 3.

Laramie group: Carbon, Wyoming.

**Vitis crenata** Heer. Fl. Foss. Alask., p. 36, pl. viii, f. 6, 1869.

Eocene?: Port Graham, Alaska.

**Vitis cuspidata** Ward. Bull. U. S. Geol. Surv., no. 37, p. 71 pl. xxxii, f. 6-8, 1887.

Fort Union group: Burns's Ranch and Seven-Mile Creek, Montana.

**Vitis islandica** (?) Heer. Fl. Foss. Arct., vol. i, p. 150, pl. xxvi, f. 1e,f, 7a; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 10, 1871 [1872]. [Not afterwards referred to by Lesquereux.]

Montana group?: Point of Rocks, Wyoming.

**Vitis Olriki** Heer. Fl. Foss. Arct., vol. i, p. 120, p. xlviii, f. 1, 1868; Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 12, 1871 [1872]; Tert. Fl., p. 241, pl. xli, f. 8, 1878.

Denver group: Mount Bross, Middle Park, Colorado.

Laramie group?: Evanston, Wyoming; Raton Mountains, New Mexico?

**Vitis rotundifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene?: Admiralty Inlet, Alaska.

**Vitis sparsa** Lx. Tert. Fl., p. 241, pl. lx, f. 24, 1878.

Laramie group: Black Buttes, Wyoming.

**Vitis tricuspidata** Heer, Lx.=*Cissus tricuspidata*.

**Vitis Xantholithensis** Ward. Bull. U. S. Geol. Surv., no. 37, p. 71, pl. xxxii, f. 4, 5, 1887.

Fort Union group: Burns's Ranch, Montana.

**Vitus** sp.? Lx. Proc. U. S. Nat. Mus., vol. xi, p. 35, 1888.

Miocene: Contra Costa, California.

**WEINMANNIA** Linnaeus. Syst., ed. x, p. 1005, 1759.

**Weinmannia Haydenii** Lx. Cret. and Tert. Fl., p. 178, pl. xlii f. 1-7 1883.

*Rhus Haydenii* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 417, 1873 [1874]; Tert. Fl., p. 294, pl. lviii, f. 12, 1878.

Green River group: Middle Park and Florissant, Colorado.

**Weinmannia integrifolia** Lx. Cret. and Tert. Fl., p. 178, pl. xlii, f. 8-13, 1883.

Green River group: Florissant, Colorado.

**Weinmannia obtusifolia** Lx. Cret. and Tert. Fl., p. 178, pl. xli, f. 4-10, 1883.

Green River group: Florissant, Colorado.

**Weinmannia rosæfolia** Lx. = *Rhus rosæfolia*.

**WIDDRINGTONIA** Endlicher. Cat. Hort. Vindob., vol. i, p. 209, 1842.

**Widdringtonia complanata** Lx. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. i, p. 366, 1875; Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 299, 1874 [1876]; Tert. Fl., p. 72, pl. lxii, f. 13, 14, 1878.

Laramie group: Point of Rocks, Wyoming.



**Widdringtonia linguæfolia** Lx. Cret. and Tert. Fl., p. 139, pl. xxi, f. 14, 14a, 1883.

Glyptostrobus europæus (Brongn.) Heer. Fl. Tert. Helv., vol. i, p. 51, pl. xix; xx, 1855; Tert. Fl., p. 74, pl. vii, f. 1, 2, 1878.

Green River group: Florissant, Colorado.

**WIDDRINGTONITES** Endlicher. Synop. Conif., p. 271, 1847.

**Widdringtonites Reichii** (Ett.) Heer. Fl. Foss. Aret., vol. vi, abt. ii, p. 51, pl. xxviii, f. 5, 1882; Newby., Fl. Amboy Clays, p. 57, pl. viii, f. 1-5, 1895 [1896].

Frenelites Reichii Ett. Kreidefl. v. Niedersch., p. 246, pl. i, f. 10a-10c, 18—.

Amboy clay: New Jersey.

**Widdringtonites subtilis** Heer. Fl. Foss. Aret., vol. iii, abt. ii, p. 101, pl. xxviii, f. 1, 1b, 1874; Newby., Fl. Amboy Clays, p. 57, pl. x, f. 2-4, 1895 [1896].

Amboy clay: Woodbridge and South Amboy, New Jersey.

Cretaceous: Marthas Vineyard.

**WILLIAMSONIA** Carruthers. Trans. Linn. Soc. London, vol. xxvi, p. 680, 1868.

**Williamsonia elocata** Lx. Fl. Dak. Gr., p. 87, pl. ii, f. 9, 9a, 1892.

Dakota group: Kansas.

**Williamsonia problematica** (Newby.) Ward=Palæanthus problematicus.

**Williamsonia recentior** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 12, pl. iv, f. 1, 1885 [1886].

Mill Creek series: Mill Creek.

**Williamsonia? Riesii** Hollick. Trans. N. Y. Acad. Sci., vol. xii, p. 37, pl. i, f. 2, 3, 1892.

Cretaceous: Staten Island.

**Williamsonia Smockii** Newby. Fl. Amboy Clays, p. 127, pl. xxxvi, f. 1-8, 1895 [1896].

Amboy clay, New Jersey.

**Williamsonia texana** Font. Proc. U. S. Nat. Mus., vol. xvi, p. 278, pl. xliii, f. 1, 2, 1893.

Trinity division: Glenrose, Texas.

**Williamsonia virginiensis** Font. Potomac Fl., p. 273, pl. cxxxiii, f. 5-7; clxv, f. 5, 1889.

Potomac formation: Trents Reach and near Dutch Gap Canal, Virginia.

**Williamsonia? sp.**, Dn. Trans. Roy. Soc. Canada, vol. x, sec. iv, p. 87, 1892 [1893].

Kootanie: Anthracite, British Columbia.

**WINCHELLIA** Lesquereux. Am. Geol., vol. xii, p. 209, 1893.

**Winchellia triphylla** Lx. Am. Geol., vol. xii, no. 4, p. 209, pl. viii, 1893.

Cretaceous: Yellowstone, near mouth of Powder River, Montana.

**WOODWARDIA** J. E. Smith. Mem. Acad. Tor., vol. v, p. 411, 1793.  
**Woodwardia latiloba** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 391, 1873 [1874]; Tert. Fl., p. 54, pl. iii, f. 1, 1a, 1878.

*Woodwardialatiloba minor* Lx. Ann. Rept., op. cit., p. 391, 1873 [1874]; Tert. Fl., p. 54, pl. iv, f. 9, 9a, 1878.

Denver Group: Golden, Colorado. •

*Woodwardia latiloba minor* Lx. = *Woodwardia latiloba*.

**Woodwardia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 140, 1897.  
 Laramie group?: North Fork Dutton Creek, Wyoming.

**Woodwardia** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 154, 1897.  
 Montana formation: Point of Rocks, Wyoming.

**ZAMIA** Linnaeus. Sp. Pl., ed. ii, p. 1659, 1763.

**Zamia Washingtoniana** Ward. Fifteenth Ann. Rept. U. S. Geol. Surv., p. 350, pl. ii, f. 6, 1895.

Potomac formation: Mount Vernon, Virginia.

**ZAMIOPSIS** Fontaine. Potomac Fl., p. 160, 1889.

**Zamiopsis insignis** Font. Potomac Fl., p. 162, pl. lxii, f. 3; lxiv, f. 1, 3; lxv, f. 4-6; lxvi, f. 2; lxvii, f. 7, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamiopsis laciniata** Font. Potomac Fl., p. 164, pl. lxvi, f. 1, 5-8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamiopsis longipennis** Font. Potomac Fl., p. 164, pl. lxi, f. 8, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamiopsis petiolata** Font. Potomac Fl., p. 166, pl. lxvi, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamiopsis pinnatifida** Font. Potomac Fl., p. 161, pl. lxi, f. 7; lxii, f. 5; lxiv, f. 2; lxvii, f. 2, 1889.

Potomac formation: Fredericksburg, Virginia.

*Zamiostrobus mirabilis* Lx. = *Cycadeoidea mirabilis*.

**ZAMITES** Brongniart. Prod. Hist. Vég. Foss., p. 94, Paris, 1828.

**Zamites acutipennis** Heer. Zeitschr. Deutsch. geol. Gesell., vol. xxiv, p. 161, 1872; Dn., Trans. Roy. Soc., Canada, vol. iii, sec. iv, p. 7, pl. i, f. 5, 1885 [1886].

Kootanie: Martin Creek, British Columbia; Great Falls, Montana.

**Zamites apertus** Newby. Am. Journ. Sci., vol. xli, p. 199, pl. xiv, f. 4, 5, 1891.

Kootanie: Great Falls, Montana.

**Zamites borealis** Heer. Fl. Foss. Arct., vol. iii, abt. ii, p. 66, pl. xiv, f. 13, 14; xv, f. 1, 2, 1873; Newby., Am. Journ. Sci., vol. xli, p. 197, 1891.

Kootanie: Great Falls, Montana.

**Zamites crassinervis** Font. Potomac Fl., p. 172, pl. lxix, f. 4; lxxxiii, f. 3, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamites distantinervis** Font. Potomac Fl., p. 172, pl. lxxxiii, f. 4, 1889.

Potomac formation: Fredericksburg, Virginia.

**Zamites montana** Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 6, 6a, 1885 [1886].

Kootanie: Martin Creek, Kootanie Pass, and Anthracite, British Columbia.

**Zamites montanensis** Font. Proc. U. S. Nat. Mus., vol. xv, p. 494, pl. lxxxiv, f. 4, 1892.

Kootanie: Great Falls, Montana.

**Zamites ovalis** Font. Potomac Fl., p. 173, pl. lxxxv, f. 4; clxx, f. 3, 1889.

Potomac formation: Dutch Gap Canal, near Potomac Run, and near Telegraph Station, Virginia.

**Zamites subfalcatus** Font. Potomac Fl., p. 173, pl. lxxxiv, f. 13; lxxxv, f. 3, 1889.

Potomac formation: Kankeys, Virginia.

**Zamites tenuinervis** Font. Potomac Fl., p. 171, pl. lxxvii, f. 1; pl. lxxix, f. 2; lxx, f. 1; lxxv, f. 3; lxxvi, f. 7; lxxviii, f. 6; lxxxiv, f. 7, 1889.

Potomac formation: Fredericksburg, Kankeys, Dutch Gap Canal, and near Telegraph Station, Virginia.

Trinity division: Glenrose, Texas.

**Zamites** sp., Dn. Trans. Roy. Soc. Canada, vol. iii, sec. iv, p. 7, pl. i, f. 4, 1885 [1886].

Kootanie: Kootanie Pass.

**Zamites** sp., Font. Potomac Fl., p. 173, pl. lxxxiv, f. 12, 1889.

Potomac formation: Kankeys, Virginia.

**Zamites** sp., Lx. Fl. Dak. Gr., p. 26, pl. i, f. 8, 1892.

Dakota group: Kansas.

**Zanthoxylon** Walt., Fl. Carol., p. 52, 243, 1878 = **Zanthoxylum** L.

**ZANTHOXYLUM** Linnæus. Hort. Cliff., p. 487, 1737.

**Zanthoxylum diversifolium** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 33, pl. viii, f. 14, 15, 1878.

Miocene: California.

**Zanthoxylum dubium** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr. 1871, suppl., p. 15, 1871 [1872]. [Not afterwards mentioned by author.]

Laramie group?: Fischers Peak, New Mexico.

**Zanthoxylum spireæfolium** Lx. Cret. and Tert. Fl., p. 196, pl. xl, f. 1-3, 1883.

Green River group: Florissant, Colorado.

**ZINGIBERITES** Heer. Fl. Tert. Helv., vol. iii, p. 172, 1859.

**Zingiberites dubius** Lx. Tert. Fl., p. 95, pl. xvi, f. 1, 1878.

*Zingiberites? undulatus* \* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 396, 1873 [1874]. [\*Preoccupied by *Z. undulatus* Heer, Balt. Fl., p. 64.]

Denver group: Golden, Colorado.

*Zingiberites undulatus* Lx. = *Zingiberites dubius*.

**ZIZYPHUS** Tournefort. Ex. Linnæus, Syst., ed. i, 1735.

**Zizyphus Beckwithii** Lx. Cret. and Tert. Fl., p. 125, pl. xix, f. 5, 1883.

Denver group: Golden, Colorado.

**Zizyphus cinnamomoides** Lx. Tert. Fl., p. 277, pl. lii, f. 7, 8, 1878.

*Ceanothus cinnamomoides* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 289, 1871 [1872].

Green River group: Green River Station, Wyoming.

Fort Union group: Seven-Mile Creek, Montana.

**Zizyphus dakotensis** Lx. Fl. Dak. Gr., p. 167, pl. xxxvi, f. 4-7, 1892.

Dakota group: Kansas.

**Zizyphus distortus** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv.

Terr., p. 404, 1873 [1874]; Tert. Fl., p. 275, pl. li, f. 7-9, 1878.

Denver group: Golden, Colorado.

**Zizyphus elegans** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxvii, f. 9, 10, 1894.

Cretaceous: Glen Cove, Long Island.

**Zizyphus fibrillosus** Lx. Tert. Fl., p. 276, pl. lii, f. 1-6, 1878.

*Ceanothus fibrillosus* Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 381, 1872 [1873].

Denver group: Golden, Colorado.

*Zizyphus hyperboreus?* Heer Lx. = *Zizyphus Lesquereuxii*.

**Zizyphus Lesquereuxii** nom. nov.

*Zizyphus hyperboreus?* Heer. Lx., Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 389, 1872 [1873]; Tert. Fl., p. 276, pl. li, f. 15, 1878. [Not *Z. hyperboreus* of Heer.]

Denver group: Golden, Colorado.

Laramie group?: Carbon, Wyoming.

**Zizyphus Lewisiana** Hollick. Bull. Torr. Bot. Club, vol. xxi, p. 58, pl. clxxx, f. 13, 1894.

Cretaceous: Oak Neck, Long Island.

**Zizyphus longifolia** Newby. Proc. U. S. Nat. Mus., vol. v, p. 513, 1882 [1883].

Eocene: Green River, Wyoming.

**Zizyphus Meekii** Lx. Ann. Rept. U. S. Geol. and Geogr. Surv. Terr., p. 388, 1872 [1873]; Tert. Fl., p. 275, pl. li, f. 10-14, 1878; Ward, Bull.

U. S. Geol. Surv., no. 37, p. 74, pl. xxxiii, f. 5, 6, 1887.

Denver group: Mount Bross, Middle Park, Colorado.

Laramie group: Black Buttes, Wyoming.

Laramie group?: Carbon, Wyoming.

Livingston beds: Bozeman coal field, Montana.

**Zizyphus microphyllus** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 28, pl. viii, f. 9, 1878.

Miocene: Chalk Bluffs, California.

**Zizyphus piperoides** Lx. Mem. Mus. Comp. Zoöl., vol. vi, no. 2, p. 28, pl. viii, f. 10, 11, 1878.

Miocene: Chalk Bluffs, California.

**Zizyphus serrulatus** Ward. Bull. U. S. Geol. Surv., no. 37, p. 73, pl. xxxiii, f. 3, 4, 1887.

Fort Union group: Burns's Ranch, Montana.

**Zizyphus Townsendi** Kn. Proc. U. S. Nat. Mus., vol. xvii, p. 229, pl. ix, f. 8, 9, 1894.

Eocene?: Herenden Bay, Alaska.

**Zizyphus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 134, 1897.

Fort Union group: Lightning Creek, Converse County, Wyoming.

**Zizyphus** sp., Kn. Bull. Geol. Soc. Am., vol. viii, p. 148, 1897.

Laramie group: Rock Springs, Wyoming.

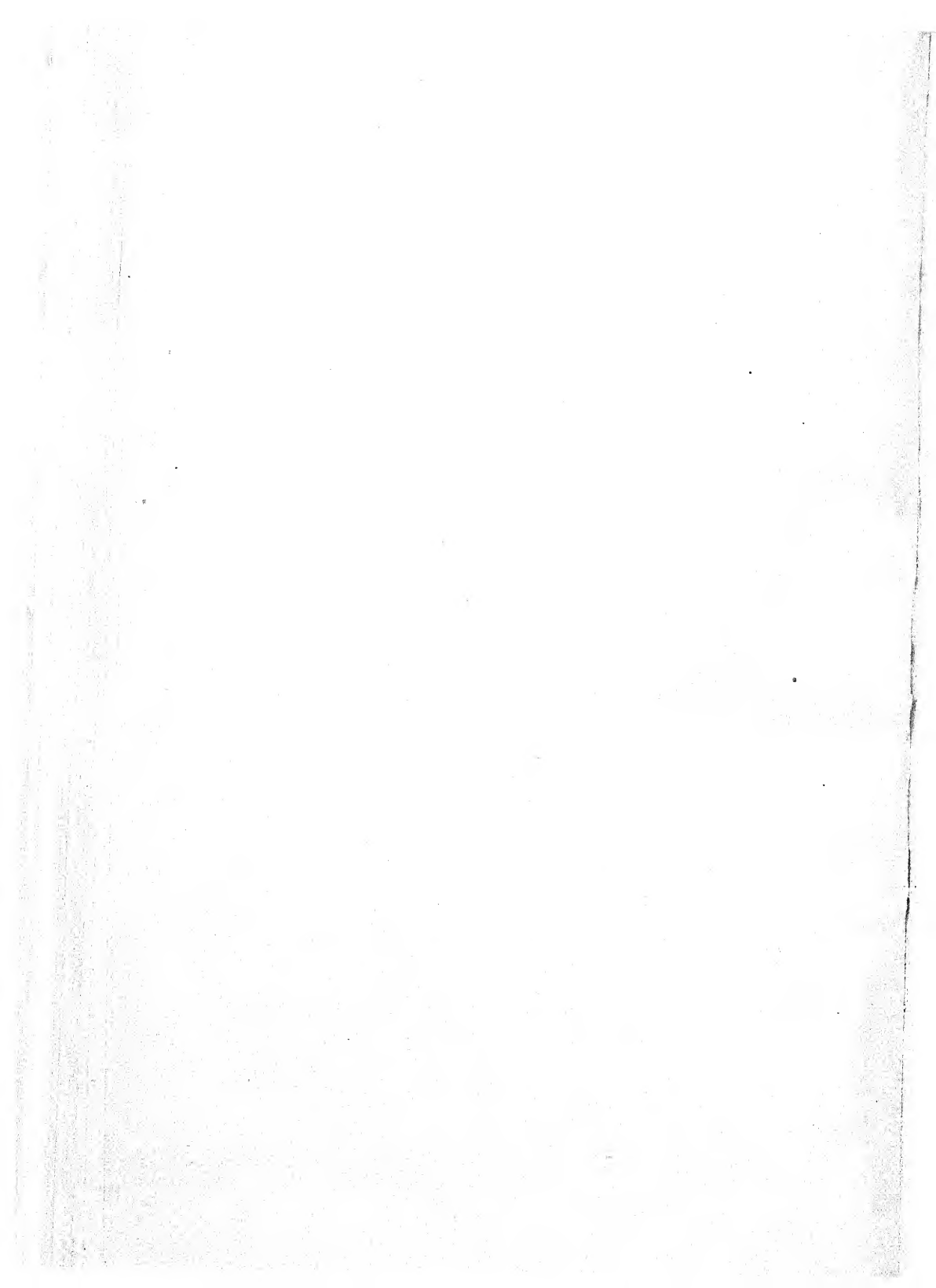
**Zonarites digitatus** (Brongn.) Gein.

Ficoides digitatus Brongn. Lx., Ann. Rept., op. cit., p. 421, 1872 [1873]; Hist. d. Vég. Foss., p. 69, pl. ix, f. 1, 1828.

Dakota group: Kansas.

**Zostera marina** L. Paisley, Can. Nat., 2d ser., vol. vii, p. 270, 1875.

Post-Pliocene: Bathurst, New Brunswick.



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[Bulletin 152.]

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64. A report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1888-'89. F. W. Clarke, Chief Chemist. 1890. 8°. 60 pp. Price 10 cents.

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69. A Classified and Annotated Bibliography of Fossil Insects, by Samuel Hubbard Scudder. 1890. 8°. 101 pp. Price 15 cents.

70. Report on Astronomical Work of 1889 and 1890, by Robert Simpson Woodward. 1890. 8°. 79 pp. Price 10 cents.

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76. A Dictionary of Altitudes in the United States (Second Edition), compiled by Henry Gannett, Chief Topographer. 1891. 8°. 393 pp. Price 25 cents.

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80. Correlation Papers—Devonian and Carboniferous, by Henry Shaler Williams. 1891. 8°. 279 pp. Price 20 cents.

81. Correlation Papers—Cambrian, by Charles Doolittle Walcott. 1891. 8°. 447 pp. 3 pl. Price 25 cents.

82. Correlation Papers—Cretaceous, by Charles A. White. 1891. 8°. 273 pp. 3 pl. Price 20 cents.

83. Correlation Papers—Eocene, by William Bullock Clark. 1891. 8°. 173 pp. 2 pl. Price 15 cents.

84. Correlation Papers—Neocene, by W. H. Dall and G. D. Harris. 1892. 8°. 349 pp. 3 pl. Price 25 cents.

85. Correlation Papers—The Newark System, by Israel Cook Russell. 1892. 8°. 344 pp. 13 pl. Price 25 cents.

86. Correlation Papers—Archean and Algonkian, by C. R. Van Hise. 1892. 8°. 549 pp. 12 pl. Price 25 cents.

87. A Synopsis of American Fossil Brachiopoda, including Bibliography and Synonymy, by Charles Schuchert. 1897. 8°. 464 pp. Price 30 cents.

88. The Cretaceous Foraminifera of New Jersey, by Rufus Mather-Bagg, Jr. 1898. 8°. 89 pp. 6 pl. Price 10 cents.

89. Some Lava Flows of the Western Slope of the Sierra Nevada, California, by F. Leslie Ransome. 1898. 8°. 74 pp. 11 pl. Price 15 cents.

90. A Report of Work done in the Division of Chemistry and Physics, mainly during the Fiscal Year 1890-'91. F. W. Clarke, Chief Chemist. 1892. 8°. 77 pp. Price 10 cents.

91. Record of North American Geology for 1890, by Nelson Horatio Darton. 1891. 8°. 88 pp. Price 10 cents.

92. The Compressibility of Liquids, by Carl Barus. 1892. 8°. 96 pp. 29 pl. Price 10 cents.

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96. The Volume Thermodynamics of Liquids, by Carl Barus. 1892. 8°. 100 pp. Price 10 cents.

97. The Mesozoic Echinodermata of the United States, by William Bullock Clark. 1893. 8°. 207 pp. 50 pl. Price 20 cents.

98. Flora of the Outlying Carboniferous Basins of Southwestern Missouri, by David White. 1893. 8°. 139 pp. 5 pl. Price 15 cents.
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102. A Catalogue and Bibliography of North American Mesozoic Invertebrata, by Cornelius Breckinridge Boyle. 1893. 8°. 315 pp. Price 25 cents.
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109. The Eruptive and Sedimentary Rocks on Pigeon Point, Minnesota, and their Contact Phenomena, by William Shirley Bayley. 1893. 8°. 121 pp. 16 pl. Price 15 cents.
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119. A Geological Reconnaissance in Northwest Wyoming, by George Homans Eldridge. 1894. 8°. 72 pp. 4 pl. Price 10 cents.
120. The Devonian System of Eastern Pennsylvania and New York, by Charles S. Prosser. 1895. 8°. 81 pp. 2 pl. Price 10 cents.
121. A Bibliography of North American Paleontology, by Charles Rollin Keyes. 1894. 8°. 251 pp. Price 20 cents.
122. Results of Primary Triangulation, by Henry Gannett. 1894. 8°. 412 pp. 17 pl. Price 25 cents.
123. A Dictionary of Geographic Positions, by Henry Gannett. 1895. 8°. 183 pp. 1 pl. Price 15 cents.
124. Revision of North American Fossil Cockroaches, by Samuel Hubbard Scudder. 1895. 8°. 176 pp. 12 pl. Price 15 cents.
125. The Constitution of the Silicates, by Frank Wigglesworth Clarke. 1895. 8°. 109 pp. Price 15 cents.
126. A Mineralogical Lexicon of Franklin, Hampshire, and Hampden Counties, Massachusetts, by Benjamin Kendall Emerson. 1895. 8°. 180 pp. 1 pl. Price 15 cents.
127. Catalogue and Index of Contributions to North American Geology, 1732-1891, by Nelson Horatio Darton. 1896. 8°. 1045 pp. Price 60 cents.
128. The Bear River Formation and its Characteristic Fauna, by Charles A. White. 1895. 8°. 108 pp. 11 pl. Price 15 cents.
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132. The Disseminated Lead Ores of Southeastern Missouri, by Arthur Winslow. 1896. 8°. 31 pp. Price 5 cents.
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  148. Analyses of Rocks, with a Chapter on Analytical Methods, Laboratory of the United States Geological Survey, 1880 to 1896, by F. W. Clarke and W. F. Hillebrand. 1897. 8°. 306 pp. Price 20 cents.
  149. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1896, by Fred Boughton Weeks. 1897. 8°. 152 pp. Price 15 cents.
  150. The Educational Series of Rock Specimens Collected and Distributed by the United States Geological Survey, by Joseph Silas Diller. 1898. 8°. 400 pp. 47 pl. Price 25 cents.
  151. The Lower Cretaceous Gryphaeas of the Texas Region, by R. T. Hill and T. Wayland Vaughan. 1898. 8°. 139 pp. 35 pl. Price 15 cents.
  152. A Catalogue of the Cretaceous and Tertiary Plants of North America, by F. H. Knowlton. 1898. 8°. 247 pp. Price 20 cents.
- In press:*
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  154. A Gazetteer of Kansas, by Henry Gannett. 1898. 8°. pp. Price cents.
  155. Earthquakes in California in 1896 and 1897, by Charles D. Perrine, Assistant Astronomer in Charge of Earthquake Observations at the Lick Observatory. 1898. 8°. pp. Price cents.

#### WATER-SUPPLY AND IRRIGATION PAPERS.

By act of Congress approved June 11, 1896, the following provision was made:

"*Provided*, That hereafter the reports of the Geological Survey in relation to the gauging of streams and to the methods of utilizing the water resources may be printed in octavo form, not to exceed one hundred pages in length and five thousand copies in number; one thousand copies of which shall be for the official use of the Geological Survey, one thousand five hundred copies shall be delivered to the Senate, and two thousand five hundred copies shall be delivered to the House of Representatives, for distribution."

Under this law the following papers have been published:

1. Pumping Water for Irrigation, by Herbert M. Wilson. 1896. 8°. 57 pp. 9 pl.
2. Irrigation near Phoenix, Arizona, by Arthur P. Davis. 1897. 8°. 97 pp. 31 pl.
3. Sewage Irrigation, by George W. Rafter. 1897. 8°. 100 pp. 4 pl.
4. A Reconnaissance in Southeastern Washington, by Israel Cook Russell. 1897. 8°. 96 pp. 7 pl.
5. Irrigation Practice on the Great Plains, by Elias Branson Cowgill. 1897. 8°. 39 pp. 12 pl.
6. Underground Waters of Southwestern Kansas, by Erasmus Haworth. 1897. 8°. 65 pp. 12 pl.
7. Seepage Waters of Northern Utah, by Samuel Fortier. 1897. 8°. 50 pp. 3 pl.
8. Windmills for Irrigation, by E. C. Murphy. 1897. 8°. 49 pp. 8 pl.
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11. River Heights for 1896, by Arthur P. Davis. 1897. 8°. 100 pp.
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14. New Tests of Certain Pumps and Water-Lifts used in Irrigation, by Ozni P. Hood. 1898. 8°. 91 pp. 1 pl.
15. Operations at River Stations, 1897, Part I. 1898. 8°. 100 pp.
16. Operations at River Stations, 1897, Part II. 1898. 8°. 101-200 pp.

## TOPOGRAPHIC MAP OF THE UNITED STATES.

When, in 1882, the Geological Survey was directed by law to make a geologic map of the United States, there was in existence no suitable topographic map to serve as a base for the geologic map. The preparation of such a topographic map was therefore immediately begun. About one-fifth of the area of the country, excluding Alaska, has now been thus mapped. The map is published in atlas sheets. Under the plan adopted the entire area of the country is divided into small quadrangular districts (designated *quadrangles*), bounded by certain meridians and parallels. The unit of survey is also the unit of publication. The separate sheets are sold at 5 cents each when fewer than 100 copies are purchased, but when they are ordered in lots of 100 or more copies, whether of the same sheet or of different sheets, the price is 2 cents each. The mapped areas are widely scattered, nearly every State being represented. More than 900 sheets have been engraved and printed; they are tabulated by States in the Survey's "List of Publications," a pamphlet which may be had on application.

The map sheets represent a great variety of topographic features, and with the aid of descriptive text they can be used to illustrate topographic forms. This has led to the projection of an educational series of topographic folios, for use wherever geography is taught in high schools, academies, and colleges. Of this series the first folio has been issued, viz:

1. Physiographic types, by Henry Gannett, 1898, folio, consisting of the following sheets and 4 pages of descriptive text: Fargo (N. Dak.-Minn.), a region in youth; Charleston (W. Va.), a region in maturity; Caldwell (Kans.), a region in old age; Palmyra (Va.), a rejuvenated region; Mount Shasta (Cal.), a young volcanic mountain; Eagle (Wis.), moraines; Sun Prairie (Wis.), drumlins; Donaldsonville (La.), river flood plains; Boothbay (Me.), a fiord coast; Atlantic City (N. J.), a barrier-beach coast.

## GEOLOGIC ATLAS OF THE UNITED STATES.

The Geologic Atlas of the United States is the final form of publication of the topographic and geologic maps. The atlas is issued in parts, or folios, progressively as the surveys are extended, and is designed ultimately to cover the entire country.

Each folio contains topographic, geologic, economic, and structural maps, together with textual descriptions and explanations, and is designated by the name of a principal town or of a prominent natural feature within the district.

Two forms of issue have been adopted, a "library edition" and a "field edition." In both the sheets are bound between heavy paper covers, but the library copies are permanently bound, while the sheets and covers of the field copies are only temporarily wired together.

Under the law a copy of each folio is sent to certain public libraries and educational institutions. The remainder are sold at 25 cents each, except such as contain an unusual amount of matter, which are priced accordingly. Prepayment is obligatory. The folios ready for distribution are listed below.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
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16	Knoxville .....	West Va.. }	83° 30'-84°	35° 30'-36°	925	25
17	Marysville .....	California. }	121° 30'-122°	39°-39° 30'	925	25
18	Smartsville .....	N. Carolina }	121°-121° 30'	39°-39° 30'	925	25
19	Stevenson .....	California. }	85° 30'-86°	34° 30'-35°	980	25
20	Cleveland .....	Georgia... }	84° 30'-85°	35°-35° 30'	975	25
21	Pikeville .....	Tennessee }	85°-85° 30'	35° 30'-36°	969	25
22	McMinnville .....	Tennessee }	85° 30'-86°	35° 30'-36°	969	25
23	Nomini .....	Tennessee }	76° 30'-77°	38°-38° 30'	938	25
24	Three Forks .....	Maryland. }	111°-112°	45°-46°	3,354	50

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29	Nevada City: Nevada City. Grass Valley. Banner Hill.	California.	121° 00' 25"-121° 03' 45" 121° 01' 35"-121° 05' 04" 120° 57' 05"-121° 00' 25"	39° 13' 50"-39° 17' 16" 39° 10' 22"-39° 13' 50" 39° 13' 50"-39° 17' 16"	11.65 12.09 11.65	50
30	Yellowstone National Park: Gallatin .....	Wyoming.	110°-111°	44°-45°	3,412	75
	Canyon .....					
	Shoshone .....					
	Lake .....					
31	Pyramid Peak .....	California.	120°-120° 30'	38° 30'-39°	932	25
32	Franklin .....	Virginia ..	79°-79° 30'	38° 30'-39°	932	25
33	Briceville .....	Tennessee	84°-84° 30'	36°-36° 30'	963	25
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35	Gadsden .....	Alabama	86°-86° 30'	34°-34° 30'	986	25
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## STATISTICAL PAPERS.

Mineral Resources of the United States, 1882, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1883 and 1884, by Albert Williams, jr. 1885. 8°. xiv, 1016 pp. Price 60 cents.

Mineral Resources of the United States, 1885. Division of Mining Statistics and Technology. 1886. 8°. vii, 576 pp. Price 40 cents.

Mineral Resources of the United States, 1886, by David T. Day. 1887. 8°. viii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1887, by David T. Day. 1888. 8°. vii, 822 pp. Price 50 cents.

Mineral Resources of the United States, 1888, by David T. Day. 1890. 8°. vii, 652 pp. Price 50 cents.

Mineral Resources of the United States, 1889 and 1890, by David T. Day. 1892. 8°. viii, 671 pp. Price 50 cents.

Mineral Resources of the United States, 1891, by David T. Day. 1893. 8°. vii, 630 pp. Price 50 cents.

Mineral Resources of the United States, 1892, by David T. Day. 1893. 8°. vii, 850 pp. Price 50 cents.

Mineral Resources of the United States, 1893, by David T. Day. 1894. 8°. viii, 810 pp. Price 50 cents.

On March 2, 1895, the following provision was included in an act of Congress:

"Provided, That hereafter the report of the mineral resources of the United States shall be issued as a part of the report of the Director of the Geological Survey."

In compliance with this legislation the following reports have been published:

Mineral Resources of the United States, 1894, David T. Day, Chief of Division. 1895. 8°. xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl. Being Parts III and IV of the Sixteenth Annual Report.

Mineral Resources of the United States, 1895, David T. Day, Chief of Division. 1896. 8°. xxiii, 542 pp., 8 pl. and maps; iii, 542-1058 pp., 9-13 pl. Being Part III (in 2 vols.) of the Seventeenth Annual Report.

Mineral Resources of the United States, 1896, David T. Day, Chief of Division. 1897. 8°. xii, 642 pp., 1 pl.; 643-1400 pp. Being Part V (in 2 vols.) of the Eighteenth Annual Report.

The report on the mineral resources for the calendar year 1897 will form a part of the Nineteenth Annual Report of the Survey.

The money received from the sale of the Survey publications is deposited in the Treasury, and the Secretary of the Treasury declines to receive bank checks, drafts, or postage stamps; all remittances, therefore, must be by MONEY ORDER, made payable to the Director of the United States Geological Survey, or in CURRENCY—the exact amount. Correspondence relating to the publications of the Survey should be addressed to—

THE DIRECTOR,

UNITED STATES GEOLOGICAL SURVEY,

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Washington | government printing office | 1898

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[UNITED STATES. *Department of the interior. (U. S. geological survey.)*  
Bulletin 152.]

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